

09/84, 809

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(FILE 'HOME' ENTERED AT 09:59:33 ON 01 JUL 2005)

FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS,
LIFESCI' ENTERED AT 10:00:00 ON 01 JUL 2005

L1 1033750 S ELECTRODE?
L2 442634 S ARRAY?
L3 23852 S L1 AND L2
L4 4941 S SOLVENT (2W)ACCESSIBLE
L5 3 S L3 AND L4
L6 1 DUP REM L5 (2 DUPLICATES REMOVED)
L7 248883 S TRANSITION (W)METAL?
L8 101 S L3 AND L7
L9 88 DUP REM L8 (13 DUPLICATES REMOVED)
L10 1129452 S LIGAND?
L11 11 S L9 AND L10
L12 2 S L9 AND COORDINATION
L13 5700021 S DETECT? OR ANALYTE?
L14 19 S L9 AND L13
L15 19 DUP REM L14 (0 DUPLICATES REMOVED)
L16 13 S L1 AND L4
L17 7 DUP REM L16 (6 DUPLICATES REMOVED)
L18 8479 S L1 AND L7
L19 663 S L10 AND L18
L20 50 S L13 AND L19
L21 41 DUP REM L20 (9 DUPLICATES REMOVED)
L22 1 S L21 AND COORDINATION
E MEADE T/AU
L23 124 S E3
L24 0 S L23 AND L18
L25 0 S L1 AND L23
E THOMAS T J/AU
L26 760 S E3
E MEADE T J/AU
L27 165 S E3
L28 8 S L1 AND L27
L29 6 DUP REM L28 (2 DUPLICATES REMOVED)

=>

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NEWS	4	FEB 28	BABS - Current-awareness alerts (SDIs) available
NEWS	5	MAR 02	GBFULL: New full-text patent database on STN
NEWS	6	MAR 03	REGISTRY/ZREGISTRY - Sequence annotations enhanced
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NEWS	8	MAR 22	KOREAPAT now updated monthly; patent information enhanced
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NEWS	10	MAR 22	PATDPASPC - New patent database available
NEWS	11	MAR 22	REGISTRY/ZREGISTRY enhanced with experimental property tags
NEWS	12	APR 04	EPFULL enhanced with additional patent information and new fields
NEWS	13	APR 04	EMBASE - Database reloaded and enhanced
NEWS	14	APR 18	New CAS Information Use Policies available online
NEWS	15	APR 25	Patent searching, including current-awareness alerts (SDIs), based on application date in CA/Caplus and USPATFULL/USPAT2 may be affected by a change in filing date for U.S. applications.
NEWS	16	APR 28	Improved searching of U.S. Patent Classifications for U.S. patent records in CA/Caplus
NEWS	17	MAY 23	GBFULL enhanced with patent drawing images
NEWS	18	MAY 23	REGISTRY has been enhanced with source information from CHEMCATS
NEWS	19	JUN 06	STN Patent Forums to be held in June 2005
NEWS	20	JUN 06	The Analysis Edition of STN Express with Discover! (Version 8.0 for Windows) now available
NEWS	21	JUN 13	RUSSIAPAT: New full-text patent database on STN
NEWS	22	JUN 13	FRFULL enhanced with patent drawing images
NEWS	23	JUN 20	MEDICONF to be removed from STN
NEWS	24	JUN 27	MARPAT displays enhanced with expanded G-group definitions and text labels
NEWS	25	JUL 01	MEDICONF removed from STN
NEWS EXPRESS			JUNE 13 CURRENT WINDOWS VERSION IS V8.0, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 13 JUNE 2005
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	ENTRY	SESSION
FULL ESTIMATED COST	0.21	0.21

FILE 'MEDLINE' ENTERED AT 10:00:00 ON 01 JUL 2005

FILE 'EMBASE' ENTERED AT 10:00:00 ON 01 JUL 2005
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FILE 'SCISEARCH' ENTERED AT 10:00:00 ON 01 JUL 2005
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FILE 'HCAPLUS' ENTERED AT 10:00:00 ON 01 JUL 2005
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FILE 'LIFESCI' ENTERED AT 10:00:00 ON 01 JUL 2005
COPYRIGHT (C) 2005 Cambridge Scientific Abstracts (CSA)

=> s electrode?

L1 1033750 ELECTRODE?

=> s array?

L2 442634 ARRAY?

=> s l1 and l2

L3 23852 L1 AND L2

=> s solvent (2w)accessible

L4 4941 SOLVENT (2W) ACCESSIBLE

=> s l3 and l4

L5 3 L3 AND L4

=> dup rem l5

PROCESSING COMPLETED FOR L5

L6 1 DUP REM L5 (2 DUPLICATES REMOVED)

=> d all

L6 ANSWER 1 OF 1 MEDLINE on STN DUPLICATE 1
AN 2005194099 MEDLINE
DN PubMed ID: 15826095
TI Electrochemical nanofabrication using crystalline protein masks.
AU Allred Daniel B; Sarikaya Mehmet; Baneyx Francois; Schwartz Daniel T
CS Chemical Engineering Department, University of Washington, Seattle,
Washington 98195-1750, USA.
SO Nano Lett, (2005 Apr) 5 (4) 609-13.
Journal code: 101088070. ISSN: 1530-6984.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200506
ED Entered STN: 20050414
Last Updated on STN: 20050622
Entered Medline: 20050621
AB We have developed a simple and robust method to fabricate nanoarrays of
metals and metal oxides over macroscopic substrates using the crystalline
surface layer (S-layer) protein of *Deinococcus radiodurans* as an
electrodeposition mask. Substrates are coated by adsorption of
the S-layer from a detergent-stabilized aqueous protein extract, producing
insulating masks with 2-3 nm diameter **solvent-accessible**
openings to the deposition substrate. The coating process can be
controlled to achieve complete or fractional surface coverage. We
demonstrate the general applicability of the technique by forming
arrays of cuprous oxide (Cu(2)O), Ni, Pt, Pd, and Co exhibiting
long-range order with the 18 nm hexagonal periodicity of the protein
openings. This protein-based approach to electrochemical nanofabrication
should permit the creation of a wide variety of two-dimensional inorganic
structures.
CT *Bacterial Proteins: CH, chemistry
Bacterial Proteins: UL, ultrastructure
Copper: CH, chemistry
*Deinococcus: CH, chemistry
Electrochemistry
*Membrane Glycoproteins: CH, chemistry
Membrane Glycoproteins: UL, ultrastructure
Metals: CH, chemistry
Microscopy, Atomic Force
*Nanotechnology: MT, methods
Research Support, Non-U.S. Gov't
Research Support, U.S. Gov't, Non-P.H.S.
RN 1317-39-1 (cuprous oxide); 7440-50-8 (Copper)
CN 0 (Bacterial Proteins); 0 (Membrane Glycoproteins); 0 (Metals); 0 (surface
array protein, bacteria)

=> d his

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FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS,
LIFESCI' ENTERED AT 10:00:00 ON 01 JUL 2005

L1 1033750 S ELECTRODE?
L2 442634 S ARRAY?
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L5 3 S L3 AND L4
L6 1 DUP REM L5 (2 DUPLICATES REMOVED)

=> s transition (w)metal?

L7 248883 TRANSITION (W) METAL?

=> s l3 and l7

L8 101 L3 AND L7

=> dup rem l8

PROCESSING COMPLETED FOR L8

L9 88 DUP REM L8 (13 DUPLICATES REMOVED)

=> d 1-88 ibib

L9 ANSWER 1 OF 88 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN

ACCESSION NUMBER: 2005-07135 BIOTECHDS

TITLE: Detecting nucleic acid hybridization of a nucleic acid probe and a target nucleic acid, for clinical diagnostics, by contacting nucleic acid probe and a redox pair of **transition metal** complexes and measuring electron catalytic signal;

a DNA **array** comprising an immobilized DNA probe for the detection of nucleic acid hybridization for infection diagnosis application

AUTHOR: KELLEY S O; LAPIERRE M; OKEEFE M

PATENT ASSIGNEE: BOSTON COLLEGE

PATENT INFO: WO 2005005952 20 Jan 2005

APPLICATION INFO: WO 2004-US14788 11 May 2004

PRIORITY INFO: US 2003-470242 13 May 2003; US 2003-470242 13 May 2003

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: WPI: 2005-122463 [13]

L9 ANSWER 2 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:493330 HCAPLUS

DOCUMENT NUMBER: 142:490219

TITLE: Organic electroluminescence device and fabrication method thereof

INVENTOR(S): Park, Jae Yong; Lee, Nam Yang; Kim, Kwan Soo

PATENT ASSIGNEE(S): LG. Philips LCD Co., Ltd., S. Korea

SOURCE: U.S. Pat. Appl. Publ., 24 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005122036	A1	20050609	US 2004-964974	20041015
JP 2005166663	A2	20050623	JP 2004-344001	20041129
PRIORITY APPLN. INFO.:			KR 2003-85398	A 20031128
			KR 2003-85399	A 20031128

L9 ANSWER 3 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:394336 HCAPLUS

DOCUMENT NUMBER: 142:440081

TITLE: Sidewall formation for high density polymer memory element **array**

INVENTOR(S): Lyons, Christopher F.; Chang, Mark S.; Lopatin, Sergey D.; Subramanian, Ramkumar; Cheung, Patrick K.; Ngo, Minh V.; Oglesby, Jane V.

PATENT ASSIGNEE(S): USA

SOURCE: U.S. Pat. Appl. Publ., 30 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005092983	A1	20050505	US 2003-699903	20031103
WO 2005045935	A2	20050519	WO 2004-US31275	20040923
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				

PRIORITY APPLN. INFO.: US 2003-699903 A 20031103

L9 ANSWER 4 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:98641 HCAPLUS

DOCUMENT NUMBER: 142:193892

TITLE: Protein and peptide sensors using electrical detection methods

INVENTOR(S): Sawyer, Jaymie Robin; Li, Changming; Choong, Vi-en; Maracas, George; Zhang, Peiming

PATENT ASSIGNEE(S): USA

SOURCE: U.S. Pat. Appl. Publ., 22 pp., Cont.-in-part of U.S. Ser. No. 506,178.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005023155	A1	20050203	US 2003-203874	20030609
US 6824669	B1	20041130	US 2000-506178	20000217
WO 2001061053	A2	20010823	WO 2001-US5476	20010220
WO 2001061053	A3	20020314		
WO 2001061053	C2	20021017		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				

PRIORITY APPLN. INFO.: US 2000-506178 A2 20000217
WO 2001-US5476 W 20010220

L9 ANSWER 5 OF 88 MEDLINE on STN DUPLICATE 1

ACCESSION NUMBER: 2005281756 IN-PROCESS

DOCUMENT NUMBER: PubMed ID: 15898804

TITLE: Short- and long-range order in the positive electrode material, Li(NiMn)0.5O2: a joint X-ray and neutron diffraction, pair distribution function

analysis and NMR study.
AUTHOR: Breger Julien; Dupre Nicolas; Chupas Peter J; Lee Peter L;
Proffen Thomas; Parise John B; Grey Clare P
CORPORATE SOURCE: Department of Chemistry, State University of New York at
Stony Brook, 11794, USA.
SOURCE: Journal of the American Chemical Society, (2005 May 25) 127
(20) 7529-37.
Journal code: 7503056. ISSN: 0002-7863.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: NONMEDLINE; IN-PROCESS; NONINDEXED; Priority Journals
ENTRY DATE: Entered STN: 20050602
Last Updated on STN: 20050602

L9 ANSWER 6 OF 88 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on
STN
ACCESSION NUMBER: 2005:244039 SCISEARCH
THE GENUINE ARTICLE: 900XH
TITLE: Molybdenum disulfide nanowires and nanoribbons by
electrochemical/chemical synthesis
AUTHOR: Li Q; Walter E C; van der Veer W E; Murray B J; Newberg J
T; Bohannan E W; Switzer J A; Hemminger J C; Penner R M
(Reprint)
CORPORATE SOURCE: Univ Calif Irvine, Dept Chem, Irvine, CA 92679 USA
(Reprint); Univ Missouri, Dept Chem, Rolla, MO 65409 USA;
Univ Missouri, Grad Ctr Mat Res, Rolla, MO 65409 USA
COUNTRY OF AUTHOR: USA
SOURCE: JOURNAL OF PHYSICAL CHEMISTRY B, (3 MAR 2005) Vol. 109,
No. 8, pp. 3169-3182.
Publisher: AMER CHEMICAL SOC, 1155 16TH ST, NW,
WASHINGTON, DC 20036 USA.
ISSN: 1520-6106.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 94
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L9 ANSWER 7 OF 88 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on
STN DUPLICATE 2
ACCESSION NUMBER: 2005:564758 SCISEARCH
THE GENUINE ARTICLE: 929RW
TITLE: Electrochemistry and bioelectrochemistry towards the
single-molecule level: Theoretical notions and systems
AUTHOR: Zhang J D; Chi Q J; Albrecht T; Kuznetsov A M; Grubb M;
Hansen A G; Wackerbarth H; Welinder A C; Ulstrup J
(Reprint)
CORPORATE SOURCE: Tech Univ Denmark, Dept Chem, Bldg 207, DK-2800 Lyngby,
Denmark (Reprint); Tech Univ Denmark, Dept Chem, DK-2800
Lyngby, Denmark; Russian Acad Sci, AN Frumkin Electrochem
Inst, Moscow 117071, Russia
COUNTRY OF AUTHOR: Denmark; Russia
SOURCE: ELECTROCHIMICA ACTA, (20 MAY 2005) Vol. 50, No. 15, Sp.
iss. SI, pp. 3143-3159.
Publisher: PERGAMON-ELSEVIER SCIENCE LTD, THE BOULEVARD,
LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, ENGLAND.
ISSN: 0013-4686.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 120
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L9 ANSWER 8 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:159020 HCAPLUS
DOCUMENT NUMBER: 142:422097
TITLE: Difference in the Magnetic Properties of Co, Fe, and
Ni 250-300 nm Wide Nanowires **Electrodeposited**
in Amorphous Anodized Alumina Templates
AUTHOR(S): Qin, Jian; Nogues, Josep; Mikhaylova, Maria; Roig,
Anna; Munoz, Juan S.; Muhammed, Mamoun
CORPORATE SOURCE: Materials Chemistry Division, Royal Institute of
Technology, Stockholm, SE 100 44, Swed.
SOURCE: Chemistry of Materials (2005), 17(7), 1829-1834
CODEN: CMATEX; ISSN: 0897-4756
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 60 THERE ARE 60 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 9 OF 88 MEDLINE on STN
ACCESSION NUMBER: 2005043032 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15672176
TITLE: Photoactive metallocyclodextrins: sophisticated
supramolecular **arrays** for the construction of
light activated miniature devices.
AUTHOR: Haider Johanna M; Pikramenou Zoe
CORPORATE SOURCE: School of Chemistry, The University of Birmingham,
Edgbaston B15 2TT, UK.
SOURCE: Chemical Society reviews, (2005 Feb) 34 (2) 120-32.
Electronic Publication: 2005-01-25. Ref: 38
Journal code: 0335405. ISSN: 0306-0012.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200503
ENTRY DATE: Entered STN: 20050127
Last Updated on STN: 20050324
Entered Medline: 20050323

L9 ANSWER 10 OF 88 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN
ACCESSION NUMBER: 2004-25929 BIOTECHDS
TITLE: Detecting nucleic acid sequence in sample, comprises
hybridizing sample with primer oligonucleotide, elongating
oligonucleotide, contacting solution of cationic electron
donor to elongated oligonucleotide and detecting target;
DNA sequence detection and oligonucleotide elongation
using DNA primer and DNA probe
AUTHOR: THORP H H; GORE M
PATENT ASSIGNEE: UNIV NORTH CAROLINA
PATENT INFO: WO 2004092708 28 Oct 2004
APPLICATION INFO: WO 2004-US6846 5 Mar 2004
PRIORITY INFO: US 2003-508327 2 Oct 2003; US 2003-452879 7 Mar 2003
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2004-784632 [77]

L9 ANSWER 11 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:780287 HCAPLUS
DOCUMENT NUMBER: 141:287400
TITLE: Method of forming DRAM capacitors with protected
outside crown surface for more robust structures
INVENTOR(S): Lin, Chun-Chieh; Chao, Lan-Lin; Lin, Chia-Hui; Yang,

PATENT ASSIGNEE(S): Fu-Liang; Tsai, Chia-Sung; Hu, Chanming
 SOURCE: Taiwan Semiconductor Manufacturing Co., Taiwan
 U.S. Pat. Appl. Publ., 16 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004185613	A1	20040923	US 2004-802564	20040317
US 6875655	B2	20050405		
TW 222212	B1	20041011	TW 2003-92105779	20030317
PRIORITY APPLN. INFO.:			TW 2003-92105779	A 20030317

L9 ANSWER 12 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2004:681133 HCAPLUS
 DOCUMENT NUMBER: 141:197201
 TITLE: Tuned microcavity color OLED display
 INVENTOR(S): Tyan, Yuan-Sheng; Farruggia, Giuseppe; Shore, Joel D.
 PATENT ASSIGNEE(S): Eastman Kodak Company, USA
 SOURCE: U.S. Pat. Appl. Publ., 26 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 4
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004160172	A1	20040819	US 2003-368513	20030218
US 6861800	B2	20050301		
US 2004155576	A1	20040812	US 2004-771885	20040204
EP 1450419	A2	20040825	EP 2004-75375	20040206
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2004253390	A2	20040909	JP 2004-41783	20040218
PRIORITY APPLN. INFO.:			US 2003-346424	A2 20030117
			US 2003-347013	A2 20030117
			US 2003-368513	A2 20030218

L9 ANSWER 13 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2004:267125 HCAPLUS
 DOCUMENT NUMBER: 140:273619
 TITLE: Systems and methods for the fabrication and evaluation of **arrays** of **electrode** and electrolyte materials for use in solid oxide fuel cells
 INVENTOR(S): Wei, Chang; Lemmon, John; Townsend, Susan
 PATENT ASSIGNEE(S): USA
 SOURCE: U.S. Pat. Appl. Publ., 9 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004062142	A1	20040401	US 2002-261247	20020930
PRIORITY APPLN. INFO.:			US 2002-261247	20020930

L9 ANSWER 14 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:3373 HCAPLUS
DOCUMENT NUMBER: 140:86037
TITLE: Laminated thin-film device using capacitor,
manufacturing method thereof, and circuit using
capacitor
INVENTOR(S): Baniecki, John David; Shioga, Takeshi; Kurihara,
Kazuaki
PATENT ASSIGNEE(S): Fujitsu Limited, Japan
SOURCE: U.S. Pat. Appl. Publ., 19 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004000667	A1	20040101	US 2003-458678	20030611
JP 2004031408	A2	20040129	JP 2002-181463	20020621
PRIORITY APPLN. INFO.:			JP 2002-181463	A 20020621

L9 ANSWER 15 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:924935 HCAPLUS
DOCUMENT NUMBER: 142:81232
TITLE: Electrochemical Redox Control of Ferrocene Using a
Supramolecular Assembly of Ferrocene-Linked C60
Derivative and Metallooctaethylporphyrin **Array**
on a Au(111) **Electrode**
AUTHOR(S): Yoshimoto, Soichiro; Saito, Akira; Tsutsumi, Eishi;
D'Souza, Francis; Ito, Osamu; Itaya, Kingo
CORPORATE SOURCE: Department of Applied Chemistry, Graduate School of
Engineering, Tohoku University, Sendai, 980-8579,
Japan
SOURCE: Langmuir (2004), 20(25), 11046-11052
CODEN: LANGD5; ISSN: 0743-7463
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 16 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:534607 HCAPLUS
DOCUMENT NUMBER: 141:192685
TITLE: Preparation and Structural Characterization of RuS2
Nanoislands on Au(111)
AUTHOR(S): Cai, Tanhong; Song, Zhen; Rodriguez, Jose A.; Hrbek,
Jan
CORPORATE SOURCE: Department of Chemistry, Brookhaven National
Laboratory, Upton, NY, 11973, USA
SOURCE: Journal of the American Chemical Society (2004),
126(29), 8886-8887
CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 17 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:661902 HCAPLUS
TITLE: **Transition metal-containing**

conducting polymers: Development of parallel sensor
arrays and electrocatalytic systems
AUTHOR(S): Holliday, Bradley J.; Swager, Timothy M.
CORPORATE SOURCE: Department of Chemistry and Institute for Soldier
Nanotechnologies, Massachusetts Institute of
Technology, Cambridge, MA, 02139, USA
SOURCE: Abstracts of Papers, 228th ACS National Meeting,
Philadelphia, PA, United States, August 22-26, 2004
(2004), INOR-738. American Chemical Society:
Washington, D. C.
CODEN: 69FTZ8
DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English

L9 ANSWER 18 OF 88 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on
STN DUPLICATE 3

ACCESSION NUMBER: 2004:930027 SCISEARCH
THE GENUINE ARTICLE: 861BU
TITLE: Ordered **arrays** of semi-crown ligands on an
Au(111) **electrode** surface: in situ STM study
AUTHOR: Pan G B; Li H J; Yuan Q H; Chen Y J (Reprint); Wan L J;
Bai C L
CORPORATE SOURCE: Chinese Acad Sci, Inst Chem, Beijing 100080, Peoples R
China (Reprint)
COUNTRY OF AUTHOR: Peoples R China
SOURCE: SCIENCE IN CHINA SERIES B-CHEMISTRY, (AUG 2004) Vol. 47,
No. 4, pp. 320-325.
Publisher: SCIENCE CHINA PRESS, 16 DONGHUANGCHENGGEN NORTH
ST, BEIJING 100717, PEOPLES R CHINA.
ISSN: 1006-9291.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 17
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L9 ANSWER 19 OF 88 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on
STN

ACCESSION NUMBER: 2004:293057 SCISEARCH
THE GENUINE ARTICLE: 804NI
TITLE: Molecular insights for how preferred oxoanions bind to and
stabilize **transition-metal**
nanoclusters: a tridentate, C-3 symmetry, lattice
size-matching binding model
AUTHOR: Finke R G (Reprint); Ozkar S
CORPORATE SOURCE: Colorado State Univ, Dept Chem, Ft Collins, CO 80523 USA
(Reprint); Middle E Tech Univ, Dept Chem, TR-06531 Ankara,
Turkey
COUNTRY OF AUTHOR: USA; Turkey
SOURCE: COORDINATION CHEMISTRY REVIEWS, (JAN 2004) Vol. 248, No.
1-2, pp. 135-146.
Publisher: ELSEVIER SCIENCE SA, PO BOX 564, 1001 LAUSANNE,
SWITZERLAND.
ISSN: 0010-8545.
DOCUMENT TYPE: General Review; Journal
LANGUAGE: English
REFERENCE COUNT: 78
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L9 ANSWER 20 OF 88 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN
DUPLICATE 4

ACCESSION NUMBER: 2004-11258 BIOTECHDS
TITLE: Device and method for detecting nucleic acid hybridization;
DNA probe immobilization on support for DNA chip

construction
AUTHOR: LEE J G; LEE S E; PARK J G; YOON G S
PATENT ASSIGNEE: LG ELECTRONICS INC
PATENT INFO: KR 2003074895 22 Sep 2003
APPLICATION INFO: KR 2002-13891 14 Mar 2002
PRIORITY INFO: KR 2002-13891 14 Mar 2002; KR 2002-13891 14 Mar 2002
DOCUMENT TYPE: Patent
LANGUAGE: Korean
OTHER SOURCE: WPI: 2004-164241 [16]

L9 ANSWER 21 OF 88 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN
ACCESSION NUMBER: 2004-07376 BIOTECHDS
TITLE: A composition for using electron transfer moieties with
different redox potentials to electronically detect nucleic
acids, particularly for the electrochemical sequencing of DNA

electron transfer moiety and DNA primer and DNA probe for
use in DNA sequencing
AUTHOR: YU C; TOR Y
PATENT ASSIGNEE: YU C; TOR Y
PATENT INFO: US 2003232354 18 Dec 2003
APPLICATION INFO: US 2003-336225 2 Jan 2003
PRIORITY INFO: US 2003-336225 2 Jan 2003; US 2000-626096 26 Jul 2000
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2004-061273 [06]

L9 ANSWER 22 OF 88 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN
ACCESSION NUMBER: 2004-11063 BIOTECHDS
TITLE: Transfecting cells, useful for treating e.g. autoimmune
disorders, blood disorders, or cardiovascular disorders,
comprises administering a nucleic acid to salivary gland, and
electroporating the salivary gland using **electrodes**

involving recombinant vector-mediated gene transfer and
expression in host cell for use in gene therapy
AUTHOR: TSENG H; BENNETT M J; ROTHMAN S S
PATENT ASSIGNEE: GENTERIC INC
PATENT INFO: US 2003198625 23 Oct 2003
APPLICATION INFO: US 2002-126315 19 Apr 2002
PRIORITY INFO: US 2002-126315 19 Apr 2002; US 2002-126315 19 Apr 2002
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2004-141541 [14]

L9 ANSWER 23 OF 88 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN
ACCESSION NUMBER: 2003-25799 BIOTECHDS
TITLE: New compositions having electronic transfer groups with
different redox potentials, useful for electronically
detecting nucleic acids, detecting target cancer gene
sequences, and for viral or bacterial detection;
electronic transfer group composition for use in DNA
detection and disease diagnosis
AUTHOR: BLACKBURN G; KAYYEM J F; TAO C; YU C
PATENT ASSIGNEE: BLACKBURN G; KAYYEM J F; TAO C; YU C
PATENT INFO: US 2003143556 31 Jul 2003
APPLICATION INFO: US 2002-137710 30 Apr 2002
PRIORITY INFO: US 2002-137710 30 Apr 2002; US 2001-281276 3 Apr 2001
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2003-730803 [69]

L9 ANSWER 24 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:219396 HCAPLUS
 DOCUMENT NUMBER: 138:257882
 TITLE: Raw materials kits for electrolyte compositions,
 electrolyte compositions and photosensitized solar
array.
 INVENTOR(S): Murai, Shinji; Mikoshiba, Satoru; Kakuno, Hiroyasu;
 Hayase, Shuji
 PATENT ASSIGNEE(S): Toshiba Corp., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 20 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003086258	A2	20030320	JP 2002-189672	20020628
US 2003127130	A1	20030710	US 2002-180018	20020627
PRIORITY APPLN. INFO.:			JP 2001-197052	A 20010628

L9 ANSWER 25 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:969317 HCAPLUS
 DOCUMENT NUMBER: 140:24087
 TITLE: Use of immobilized, uncharged analogs of
 oligonucleotide probes for the electrochemical
 detection of hybridization
 INVENTOR(S): Hartwich, Gerhard; Schuhmann, Wolfgang; Frischmann,
 Peter; Wieder, Herbert
 PATENT ASSIGNEE(S): FRIZ Biochem GmbH, Germany
 SOURCE: Ger. Offen., 20 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10221004	A1	20031211	DE 2002-10221004	20020511
PRIORITY APPLN. INFO.:			DE 2002-10221004	20020511
REFERENCE COUNT:	6	THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD.. ALL CITATIONS AVAILABLE IN THE RE FORMAT		

L9 ANSWER 26 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:793411 HCAPLUS
 DOCUMENT NUMBER: 139:287272
 TITLE: Electrochemical detection of nucleic acid
 hybridization using probe **arrays** immobilized
 on **electrodes**
 INVENTOR(S): Hartwich, Gerhard
 PATENT ASSIGNEE(S): Friz Biochem GmbH, Germany
 SOURCE: Ger. Offen., 8 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10212958	A1	20031009	DE 2002-10212958	20020322
PRIORITY APPLN. INFO.:			DE 2002-10212958	20020322

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 27 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:402675 HCAPLUS

DOCUMENT NUMBER: 139:142477

TITLE: Angular dependence of the coercivity and remanence of ferromagnetic nanowire **arrays**

AUTHOR(S): Han, G. C.; Zong, B. Y.; Luo, P.; Wu, Y. H.

CORPORATE SOURCE: Nano Spinelectronics, DSI, Singapore, 117608, Singapore

SOURCE: Journal of Applied Physics (2003), 93(11), 9202-9207

CODEN: JAPIAU; ISSN: 0021-8979

PUBLISHER: American Institute of Physics

DOCUMENT TYPE: Journal

LANGUAGE: English

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 28 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:689349 HCAPLUS

DOCUMENT NUMBER: 139:344578

TITLE: Magnetic coupling in epitaxial TM/MgO/Fe(001) (TM=FeCo, Fe/Co, Fe) macroscopic and microscopic trilayers

AUTHOR(S): Martinez Boubeta, C.; de Teresa, J. M.; Costa-Kramer, J. L.; Anguita, J.; Serrate, D.; Arnaud, J. I.; Ibarra, M. R.; Cebollada, A.; Briones, F.

CORPORATE SOURCE: Isaac Newton 8-PTM, Instituto de Microelectronica de Madrid-IMM (CNM-CSIC), Madrid, 28760, Spain

SOURCE: Journal of Applied Physics (2003), 94(6), 4006-4012

CODEN: JAPIAU; ISSN: 0021-8979

PUBLISHER: American Institute of Physics

DOCUMENT TYPE: Journal

LANGUAGE: English

REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 29 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:746831 HCAPLUS

DOCUMENT NUMBER: 140:51971

TITLE: Electrochemical deposition of macroporous magnetic networks using colloidal templates

AUTHOR(S): Bartlett, Philip N.; Ghanem, Mohamed A.; El Hallag, Ibrahim S.; De Groot, Peter; Zhukov, Alexander

CORPORATE SOURCE: Department of Chemistry, University of Southampton, Southampton, SO17 1BJ, UK

SOURCE: Journal of Materials Chemistry (2003), 13(10), 2596-2602

CODEN: JMACEP; ISSN: 0959-9428

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

REFERENCE COUNT: 51 THERE ARE 51 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 30 OF 88 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN

ACCESSION NUMBER: 2003:1045099 SCISEARCH

THE GENUINE ARTICLE: 747TG

TITLE: Simple solid-phase synthesis of hollow graphitic nanoparticles and their application to direct methanol fuel cell **electrodes**

AUTHOR: Han S J; Yun Y K; Park K W; Sung Y E; Hyeon T (Reprint)
CORPORATE SOURCE: Seoul Natl Univ, Natl Creat Res Initiat Ctr Oxide
Nanocrystalline, Seoul 151744, South Korea (Reprint);
Seoul Natl Univ, Sch Chem Engrn, Seoul 151744, South Korea;
Kwangju Inst Sci & Technol, Dept Mat Sci & Engrn, Kwangju
500712, South Korea; Kwangju Inst Sci & Technol, Res Ctr
Energy Convers & Storage, Kwangju 500712, South Korea
COUNTRY OF AUTHOR: South Korea
SOURCE: ADVANCED MATERIALS, (17 NOV 2003) Vol. 15, No. 22, pp.
1922-+.
Publisher: WILEY-V C H VERLAG GMBH, PO BOX 10 11 61,
D-69451 WEINHEIM, GERMANY.
ISSN: 0935-9648.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 44

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L9 ANSWER 31 OF 88 MEDLINE on STN
ACCESSION NUMBER: 2004004006 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14700229
TITLE: Complexation of silver and co-recovered metals with novel
aza-crown ether macrocycles by electrospray ionization mass
spectrometry.
AUTHOR: Williams Sheldon M; Brodbelt Jennifer S; Huang Zilin; Lai
Huiguo; Marchand Alan P
CORPORATE SOURCE: Department of Chemistry and Biochemistry, University of
Texas at Austin, Austin, TX 78712, USA.
SOURCE: Analyst, (2003 Nov) 128 (11) 1352-9.
Journal code: 0372652. ISSN: 0003-2654.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200403
ENTRY DATE: Entered STN: 20040106
Last Updated on STN: 20040316
Entered Medline: 20040315

L9 ANSWER 32 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:522201 HCAPLUS
TITLE: Modifying a single tip of a carbon nanotube through
bipolar **electrodeposition**
AUTHOR(S): Ndungu, Patrick; Bradley, Jean-Claude
CORPORATE SOURCE: College of Arts and Sciences, Department of Chemistry,
Drexel University, Philadelphia, PA, USA
SOURCE: Abstracts, 36th Middle Atlantic Regional Meeting of
the American Chemical Society, Princeton, NJ, United
States, June 8-11 (2003), 324. American Chemical
Society: Washington, D. C.
CODEN: 69EBDT
DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English

L9 ANSWER 33 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:634112 HCAPLUS
TITLE: Bio-inspired sensor based on bioinorganic model
complexes and **array** of carbon nanotube
electrodes
AUTHOR(S): Roy, Sudeshna; Jessica, Koehne; Mascharak, Pradip K.;
Nguyen, Cattien V.; Meyyappan, M.
CORPORATE SOURCE: Center for Nanotechnology, ELORET Corp./NASA Ames
Research Center, Moffett Field, CA, 94035, USA

SOURCE: Abstracts of Papers, 226th ACS National Meeting, New York, NY, United States, September 7-11, 2003 (2003), INOR-254. American Chemical Society: Washington, D. C.
CODEN: 69EKY9
DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English

L9 ANSWER 34 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:181183 HCAPLUS
TITLE: Extending SERS study to **transition-metal electrode** and nanoparticle surfaces
AUTHOR(S): Tian, Zhong-Qun; Ren, Bin; Yang, Zhi-Lin; Hu, Jian-Qiang; Hu, Jia-Wen; Sun, Shi-Gang
CORPORATE SOURCE: Department of Chemistry, State Key Lab for Phys. Chem. of Solid Surfaces, Xiamen University, Xiamen, 361005, Peop. Rep. China
SOURCE: Abstracts of Papers, 225th ACS National Meeting, New Orleans, LA, United States, March 23-27, 2003 (2003), COLL-079. American Chemical Society: Washington, D. C.
CODEN: 69DSA4
DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English

L9 ANSWER 35 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:713849 HCAPLUS
DOCUMENT NUMBER: 140:7048
TITLE: Optical measurements of platinum based electrocatalysts for the electrooxidation of methanol
AUTHOR(S): Gruber, K.; Kronberger, H.; Fafilek, G.; Nauer, G.; Besenhard, J.-O.
CORPORATE SOURCE: ECHEM Centre of Competence in Applied Electrochemistry, Wiener Neustadt, Austria
SOURCE: Fuel Cells (Weinheim, Germany) (2003), 3(1-2), 3-7
CODEN: FUCEFK; ISSN: 1615-6846
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 36 OF 88 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN
ACCESSION NUMBER: 2002-16165 BIOTECHDS
TITLE: Detecting target nucleic acid in a sample, by constructing dendritic architecture of double-stranded nucleic acid crosslinked semiconductor-nanoparticle **arrays** on solid supports and controlled photocurrent generation; DNA or RNA detection in a sample using DNA **array**, DNA probe and DNA chip for genetic disease diagnosis
AUTHOR: WILLNER I
PATENT ASSIGNEE: YISSUM RES DEV CO HEBREW UNIV JERUSALEM; PATOLSKY F
PATENT INFO: WO 2002031191 18 Apr 2002
APPLICATION INFO: WO 2000-IL886 12 Oct 2000
PRIORITY INFO: IL 2000-138988 12 Oct 2000
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2002-463268 [49]

L9 ANSWER 37 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2002:793547 HCAPLUS
DOCUMENT NUMBER: 137:313078

TITLE: A process for the preparation of nanostructured materials
 INVENTOR(S): Kowalewski, Tomasz; Lambeth, David N.; Matyjaszewski, Krzysztof; Spanswick, James; Tsarevsky, Nicolay V.
 PATENT ASSIGNEE(S): Carnegie Mellon University, USA
 SOURCE: PCT Int. Appl., 103 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002081372	A2	20021017	WO 2002-US10811	20020406
WO 2002081372	A3	20030904		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
US 2003185741	A1	20031002	US 2002-118519	20020406
EP 1377519	A2	20040107	EP 2002-763965	20020406
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR			
JP 2005500229	T2	20050106	JP 2002-579368	20020406
PRIORITY APPLN. INFO.:			US 2001-282132P	P 20010406
			WO 2002-US10811	W 20020406

L9 ANSWER 38 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2002:658511 HCAPLUS
 DOCUMENT NUMBER: 137:193961
 TITLE: Process and structure for masking integrated capacitors of particular utility for ferroelectric memory integrated circuits
 INVENTOR(S): Sun, Shan; Hickert, George; Johnson, Diana; Ortega, John; Dale, Eric; Ueda, Masahisa
 PATENT ASSIGNEE(S): Ramtron International Corporation, USA; Ulvac Japan, Ltd.
 SOURCE: U.S. Pat. Appl. Publ., 6 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002117701	A1	20020829	US 2001-797394	20010228
US 2003071294	A1	20030417	US 2002-285140	20021030
PRIORITY APPLN. INFO.:			US 2001-797394	A3 20010228

L9 ANSWER 39 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2002:315392 HCAPLUS
 DOCUMENT NUMBER: 136:328204
 TITLE: Metallic blocking layers integrally associated with fuel cell electrode structures and fuel cell electrode stack assemblies

INVENTOR(S): Ohlsen, Leroy J.; Cooke, Aaron M.; Mallari, Jonathan C.; Chan, Chung M.
 PATENT ASSIGNEE(S): Neah Power Systems, Inc., USA
 SOURCE: U.S. Pat. Appl. Publ., 13 pp., Cont.-in-part of U. S. Ser. No. 715,830.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 6
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002048703	A1	20020425	US 2001-839787	20010419
US 6720105	B2	20040413		
US 6641948	B1	20031104	US 2000-715830	20001117
CA 2444688	AA	20021031	CA 2002-2444688	20020419
WO 2002086994	A1	20021031	WO 2002-US12386	20020419
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1390996	A1	20040225	EP 2002-731430	20020419
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2004527086	T2	20040902	JP 2002-584409	20020419
US 6852443	B1	20050208	US 2003-613784	20030707
US 2005089748	A1	20050428	US 2004-996647	20041123
PRIORITY APPLN. INFO.:				
			US 1999-166372P	P 19991117
			US 2000-189205P	P 20000314
			US 2000-200866P	P 20000502
			US 2000-715830	A2 20001117
			US 2001-839786	A 20010419
			US 2001-839787	A 20010419
			US 2001-839950	A 20010419
			US 2001-858327	A 20010515
			WO 2002-US12386	W 20020419
			US 2003-613784	A1 20030707

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 40 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:123440 HCAPLUS

DOCUMENT NUMBER: 136:160585

TITLE: Micro-machined thin film sensor **arrays** for the detection of H₂, NH₃, and sulfur-containing gases, and method of making and using the same

INVENTOR(S): Dimeo, Frank; Baum, Thomas H.

PATENT ASSIGNEE(S): USA

SOURCE: U.S. Pat. Appl. Publ., 32 pp., Cont.-in-part of U.S. 6,265,222

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 4

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002017126	A1	20020214	US 2001-828115	20010406
US 6596236	B2	20030722		
US 6006582	A	19991228	US 1998-42698	19980317
US 6029500	A	20000229	US 1998-81957	19980519
US 6265222	B1	20010724	US 1999-231277	19990115
TW 546476	B	20030811	TW 2002-91106712	20020403
WO 2002082045	A2	20021017	WO 2002-US10598	20020405
WO 2002082045	A3	20030417		
WO 2002082045	B1	20040521		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1384059	A2	20040128	EP 2002-731257	20020405
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2004519683	T2	20040702	JP 2002-579767	20020405
US 2003153088	A1	20030814	US 2003-370937	20030220
PRIORITY APPLN. INFO.:			US 1998-42698	A 19980317
			US 1998-81957	A 19980519
			US 1999-231277	A2 19990115
			US 2001-828115	A 20010406
			WO 2002-US10598	W 20020405

L9 ANSWER 41 OF 88 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN DUPLICATE 5

ACCESSION NUMBER: 2002:777009 SCISEARCH

THE GENUINE ARTICLE: 593TY

TITLE: Surface-enhanced Raman scattering: From noble to **transition metals** and from rough surfaces to ordered nanostructures

AUTHOR: Tian Z Q (Reprint); Ren B; Wu D Y

CORPORATE SOURCE: Xiamen Univ, State Key Lab Phys Chem Solid Surfaces, Xiamen 361005, Peoples R China (Reprint); Xiamen Univ, Dept Chem, Xiamen 361005, Peoples R China

COUNTRY OF AUTHOR: Peoples R China

SOURCE: JOURNAL OF PHYSICAL CHEMISTRY B, (19 SEP 2002) Vol. 106, No. 37, pp. 9463-9483.
Publisher: AMER CHEMICAL SOC, 1155 16TH ST, NW, WASHINGTON, DC 20036 USA.
ISSN: 1089-5647.

DOCUMENT TYPE: General Review; Journal

LANGUAGE: English

REFERENCE COUNT: 267

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L9 ANSWER 42 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:477100 HCAPLUS

DOCUMENT NUMBER: 137:176255

TITLE: Multicomponent **Electrodes** for Water
Oxidation: From Combinatorial to Individual **Electrode** Study

AUTHOR(S): Dokoutchaev, Alexandre G.; Abdelrazzaq, Feras; Thompson, Mark E.; Willson, Jennifer; Chang, Clark; Bocarsly, Andrew

CORPORATE SOURCE: Department of Chemistry, University of Southern
California, Los Angeles, CA, 90089, USA
SOURCE: Chemistry of Materials (2002), 14(8), 3343-3348
CODEN: CMATEX; ISSN: 0897-4756
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 43 OF 88 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on
STN DUPLICATE 6

ACCESSION NUMBER: 2002:978469 SCISEARCH
THE GENUINE ARTICLE: 621KX
TITLE: SERS mechanism of nickel **electrode**
AUTHOR: Yang Z L; Wu D Y; Yao J L; Hu J Q; Ren B; Zhou H G; Tian Z
Q (Reprint)
CORPORATE SOURCE: Xiamen Univ, Dept Chem, State Key Lab Phys Chem Solid
Surfaces, Xiamen 361005, Peoples R China (Reprint); Xiamen
Univ, Dept Phys, Xiamen 361005, Peoples R China
COUNTRY OF AUTHOR: Peoples R China
SOURCE: CHINESE SCIENCE BULLETIN, (DEC 2002) Vol. 47, No. 23, pp.
1983-1986.
Publisher: SCIENCE CHINA PRESS, 16 DONGHUANGCHENGGEN NORTH
ST, BEIJING 100717, PEOPLES R CHINA.
ISSN: 1001-6538.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 18

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L9 ANSWER 44 OF 88 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on
STN

ACCESSION NUMBER: 2002:333697 SCISEARCH
THE GENUINE ARTICLE: 542DR
TITLE: Patterned redox **arrays** of polyarylamines I.
Synthesis and electrochemistry of a p-phenylenediamine and
arylamino-appended p-phenylenediamine **arrays**
AUTHOR: Selby T D; Kim K Y; Blackstock S C (Reprint)
CORPORATE SOURCE: Univ Alabama, Dept Chem, Box 870336, Tuscaloosa, AL 35487
USA (Reprint); Univ Alabama, Dept Chem, Tuscaloosa, AL
35487 USA
COUNTRY OF AUTHOR: USA
SOURCE: CHEMISTRY OF MATERIALS, (APR 2002) Vol. 14, No. 4, pp.
1685-1690.
Publisher: AMER CHEMICAL SOC, 1155 16TH ST, NW,
WASHINGTON, DC 20036 USA.
ISSN: 0897-4756.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 34

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L9 ANSWER 45 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:433330 HCAPLUS
DOCUMENT NUMBER: 137:240502
TITLE: Feasibility of thin film microfabricated hydrogen ion
sources
AUTHOR(S): Reuss, Robert H.; Chalamala, Babu R.
CORPORATE SOURCE: Digital DNA Laboratory, MD: EL704, Semiconductor
Products Sector, Motorola Inc., Tempe, AZ, 85284, USA
SOURCE: Journal of Vacuum Science & Technology, B:
Microelectronics and Nanometer Structures (2002),

20(3), 1132-1134
CODEN: JVTBD9; ISSN: 0734-211X
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 46 OF 88 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on
STN DUPLICATE 7

ACCESSION NUMBER: 2002:828767 SCISEARCH
THE GENUINE ARTICLE: 600DN
TITLE: Structural stability of MnO₂ polymorphs and their
reactivity vs. lithium
AUTHOR: Kucza W (Reprint)
CORPORATE SOURCE: Univ Min & Met Krakow, Dept Inorgan Chem, Mickiewicza 30,
PL-30059 Krakow, Poland (Reprint); Univ Min & Met Krakow,
Dept Inorgan Chem, PL-30059 Krakow, Poland
COUNTRY OF AUTHOR: Poland
SOURCE: ELECTROCHEMISTRY COMMUNICATIONS, (SEP 2002) Vol. 4, No. 9,
pp. 669-673.
Publisher: ELSEVIER SCIENCE INC, 360 PARK AVE SOUTH, NEW
YORK, NY 10010-1710 USA.
ISSN: 1388-2481.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 20

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L9 ANSWER 47 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2002:675412 HCAPLUS
DOCUMENT NUMBER: 137:343174
TITLE: Combinatorial Electrochemical Synthesis and
Characterization of Tungsten-Based Mixed-Metal Oxides
AUTHOR(S): Baeck, S. H.; Jaramillo, T. F.; Braendli, C.;
McFarland, E. W.
CORPORATE SOURCE: Department of Chemical Engineering, University of
California Santa Barbara, Santa Barbara, CA,
93106-5080, USA
SOURCE: Journal of Combinatorial Chemistry (2002), 4(6),
563-568
CODEN: JCCHFF; ISSN: 1520-4766
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 48 OF 88 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on
STN

ACCESSION NUMBER: 2002:930714 SCISEARCH
THE GENUINE ARTICLE: 613CF
TITLE: Incoherent magnetization reversal in nanowires
AUTHOR: Skomski R (Reprint); Zeng H; Sellmyer D J
CORPORATE SOURCE: Univ Nebraska, Ctr Mat Res & Anal, Dept Phys & Astron,
Lincoln, NE 68588 USA (Reprint)
COUNTRY OF AUTHOR: USA
SOURCE: JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS, (AUG 2002)
Vol. 249, No. 1-2, pp. 175-180.
Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE
AMSTERDAM, NETHERLANDS.
ISSN: 0304-8853.
DOCUMENT TYPE: Article; Journal

LANGUAGE: English

REFERENCE COUNT: 37

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L9 ANSWER 49 OF 88 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on
STN DUPLICATE 8

ACCESSION NUMBER: 2002:768307 SCISEARCH

THE GENUINE ARTICLE: 590QA

TITLE: Surface enhanced Raman scattering from **transition metal nano-wire array** and the theoretical consideration

AUTHOR: Yao J L; Tang J; Wu D Y; Sun D M; Xue K H; Ren B; Mao B W; Tian Z Q (Reprint)

CORPORATE SOURCE: Xiamen Univ, Dept Chem, Inst Phys Chem, State Key Lab Phys Chem Solid Surfaces, Xiamen 361005, Peoples R China (Reprint); Nanjing Normal Univ, Dept Chem, Nanjing 210097, Peoples R China

COUNTRY OF AUTHOR: Peoples R China

SOURCE: SURFACE SCIENCE, (10 AUG 2002) Vol. 514, No. 1-3, Sp. iss. SI, pp. 108-116.

Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE

AMSTERDAM, NETHERLANDS.

ISSN: 0039-6028.

DOCUMENT TYPE: Article; Journal

LANGUAGE: English

REFERENCE COUNT: 45

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L9 ANSWER 50 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:618212 HCAPLUS

DOCUMENT NUMBER: 135:177678

TITLE: Protein and peptide sensors using electrical detection methods

INVENTOR(S): Sawyer, Jaymie Robin; Li, Changming; Choong, Vi-En; Maracas, George; Zhang, Peiming

PATENT ASSIGNEE(S): Motorola, Inc., USA

SOURCE: PCT Int. Appl., 53 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001061053	A2	20010823	WO 2001-US5476	20010220
WO 2001061053	A3	20020314		
WO 2001061053	C2	20021017		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
US 6824669	B1	20041130	US 2000-506178	20000217
CA 2404492	AA	20010823	CA 2001-2404492	20010220
EP 1257820	A2	20021120	EP 2001-911028	20010220
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR			
US 2005023155	A1	20050203	US 2003-203874	20030609

PRIORITY APPLN. INFO.:

US 2000-506178

A2 20000217

WO 2001-US5476

W 20010220

L9 ANSWER 51 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:452915 HCAPLUS

DOCUMENT NUMBER: 135:43086

TITLE: Column-and-row-addressable high-density biochip
array

INVENTOR(S): Shi, Song; Zhang, Peiming; Maracas, George

PATENT ASSIGNEE(S): Motorola Inc., USA

SOURCE: PCT Int. Appl., 22 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001043870	A2	20010621	WO 2000-US34222	20001214
WO 2001043870	A3	20020221		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
CA 2393766	AA	20010621	CA 2000-2393766	20001214
EP 1251955	A2	20021030	EP 2000-984476	20001214
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR			
JP 2003517149	T2	20030520	JP 2001-544994	20001214
US 2002090649	A1	20020711	US 2001-945154	20010831
PRIORITY APPLN. INFO.:			US 1999-464500	A1 19991215
			US 2000-652284	A1 20000831
			WO 2000-US34222	W 20001214
			US 2001-299780P	P 20010620

L9 ANSWER 52 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:435309 HCAPLUS

DOCUMENT NUMBER: 135:43123

TITLE: Methods and compositions relating to electrical detection of nucleic acid hybridization or peptide binding preferably using AC impedance

INVENTOR(S): Choong, Vi-en; Gallagher, Sean; Gaskin, Mike; Li, Changming; Maracas, George; Shi, Song

PATENT ASSIGNEE(S): Motorola, Inc., USA

SOURCE: PCT Int. Appl., 63 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001042508	A2	20010614	WO 2000-US33497	20001211
WO 2001042508	A3	20020314		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,			

HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,
 LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,
 SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,
 YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
 BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

US 2002051975	A1	20020502	US 1999-458533	19991209
US 2002064775	A1	20020530	US 1999-459685	19991213
US 6518024	B2	20030211		
CA 2393733	AA	20010614	CA 2000-2393733	20001211
EP 1238114	A2	20020911	EP 2000-993326	20001211
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2003516165	T2	20030513	JP 2001-544379	20001211
US 2003096283	A1	20030522	US 2002-259532	20020927
US 2003209432	A1	20031113	US 2003-149319	20030228
PRIORITY APPLN. INFO.:			US 1999-458501	A 19991209
			US 1999-458533	A 19991209
			US 1999-459685	A 19991213
			WO 2000-US33497	W 20001211

L9 ANSWER 53 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2001:713792 HCAPLUS
 DOCUMENT NUMBER: 135:250408
 TITLE: Integrated circuitry and methods of forming circuits
 with a minimum number of steps
 INVENTOR(S): Schuegraf, Klaus Florian; Thakur, Randhir P. S.
 PATENT ASSIGNEE(S): Micron Technology, Inc., USA
 SOURCE: U.S. Pat. Appl. Publ., 24 pp., Division of U.S. Ser.
 No. 378,433.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2001023953	A1	20010927	US 2001-797900	20010301
US 6548852	B2	20030415		
US 2002119624	A1	20020829	US 2001-17557	20011214
US 6645845	B2	20031111		
US 2004063296	A1	20040401	US 2003-676498	20030930
US 6784052	B2	20040831		
PRIORITY APPLN. INFO.:			US 1999-378433	A3 19990820
			US 2001-17557	A1 20011214

L9 ANSWER 54 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2001:772103 HCAPLUS
 DOCUMENT NUMBER: 135:297162
 TITLE: Method of forming a self-aligned contact hole on a
 semiconductor wafer to give low resistance
 INVENTOR(S): Hsu, Hsin-Tuei; Lin, Yuang-Chang; Lin, Wen-Jeng
 PATENT ASSIGNEE(S): United Microelectronics Corp., Taiwan
 SOURCE: U.S., 11 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 6306760	B1	20011023	US 1999-457327	19991209
PRIORITY APPLN. INFO.:			US 1999-457327	19991209
REFERENCE COUNT:	11	THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT		

L9 ANSWER 55 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:314168 HCAPLUS

DOCUMENT NUMBER: 134:327946

TITLE: Ordered **arrays** via metal-initiated self-assembly of ligand containing dendrimers and bridging ligands

INVENTOR(S): Diaz, Diego; Storrier, Gregory D.; Takada, Kazutake; Bernhard, Stefan; Abruna, Hector D.

PATENT ASSIGNEE(S): Cornell Research Foundation, Inc., USA

SOURCE: U.S., 9 pp.
CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	-----	-----	-----	-----
US 6224935	B1	20010501	US 2000-488927	20000121
PRIORITY APPLN. INFO.:			US 1999-117644P	P 19990128
REFERENCE COUNT:	23	THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT		

L9 ANSWER 56 OF 88 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN DUPLICATE 9

ACCESSION NUMBER: 2001:584350 SCISEARCH

THE GENUINE ARTICLE: 454JN

TITLE: Magnetism of Fe, Co and Ni nanowires in self-assembled **arrays**

AUTHOR: Sellmyer D J (Reprint); Zheng M; Skomski R

CORPORATE SOURCE: Univ Nebraska, Dept Phys & Astron, Lincoln, NE 68588 USA (Reprint); Univ Nebraska, Ctr Mat Res & Anal, Lincoln, NE 68588 USA

COUNTRY OF AUTHOR: USA

SOURCE: JOURNAL OF PHYSICS-CONDENSED MATTER, (25 JUN 2001) Vol. 13, No. 25, pp. R433-R460.
Publisher: IOP PUBLISHING LTD, DIRAC HOUSE, TEMPLE BACK, BRISTOL BS1 6BE, ENGLAND.
ISSN: 0953-8984.

DOCUMENT TYPE: General Review; Journal

LANGUAGE: English

REFERENCE COUNT: 77

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L9 ANSWER 57 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:80259 HCAPLUS

DOCUMENT NUMBER: 136:372158

TITLE: Combinatorial approach to high speed screening electrocatalysts for direct methanol fuel cells

AUTHOR(S): Chu, Deryn; Jiang, Rongzhong

CORPORATE SOURCE: Electrochemistry Branch, Sensors and Electron Devices Directorate U.S. Army Research Laboratory, Adelphi, MD, 20783-1197, USA

SOURCE: Proceedings - Electrochemical Society (2001), 2001-4(Direct Methanol Fuel Cells), 188-190
CODEN: PESODO; ISSN: 0161-6374

PUBLISHER: Electrochemical Society

DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 58 OF 88 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on
STN

ACCESSION NUMBER: 2001:720798 SCISEARCH
THE GENUINE ARTICLE: 470ZG
TITLE: Preparation of nanowires and microarrays
AUTHOR: Zhang L D; Meng G W (Reprint); Phillipp F
CORPORATE SOURCE: Chinese Acad Sci, Inst Solid State Phys, Hefei 230031,
Peoples R China (Reprint); Max Planck Inst Met Res,
D-70569 Stuttgart, Germany
COUNTRY OF AUTHOR: Peoples R China; Germany
SOURCE: CHINESE PHYSICS, (JUL 2001) Vol. 10, Supp. [S], pp.
S117-S123.
Publisher: CHINESE PHYSICAL SOC, P O BOX 603, BEIJING
100080, PEOPLES R CHINA.
ISSN: 1009-1963.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 49

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L9 ANSWER 59 OF 88 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on
STN

ACCESSION NUMBER: 2001:980265 SCISEARCH
THE GENUINE ARTICLE: 499NT
TITLE: Ferrocene polymers: current architectures, syntheses and
utility
AUTHOR: Hudson R D A (Reprint)
CORPORATE SOURCE: Univ Coll Dublin, Dept Chem, Dublin D4, Ireland (Reprint)
COUNTRY OF AUTHOR: Ireland
SOURCE: JOURNAL OF ORGANOMETALLIC CHEMISTRY, (3 DEC 2001) Vol.
637, Sp. iss. SI, pp. 47-69.
Publisher: ELSEVIER SCIENCE SA, PO BOX 564, 1001 LAUSANNE,
SWITZERLAND.
ISSN: 0022-328X.
DOCUMENT TYPE: General Review; Journal
LANGUAGE: English
REFERENCE COUNT: 216

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L9 ANSWER 60 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:271905 HCAPLUS
DOCUMENT NUMBER: 132:272910
TITLE: Short turnaround-time mask ROM process
INVENTOR(S): Sheu, Shing-Ren; Kung, Cheng-Chih
PATENT ASSIGNEE(S): United Microelectronics Corporation, Taiwan
SOURCE: U.S., 8 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6054353	A	20000425	US 1996-746855	19961118
PRIORITY APPLN. INFO.:			US 1996-13934P	P 19960322
REFERENCE COUNT:	3	THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT		

L9 ANSWER 61 OF 88 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on
STN DUPLICATE 10

ACCESSION NUMBER: 2000:491630 SCISEARCH
THE GENUINE ARTICLE: 328DG
TITLE: A complementary study of surface-enhanced Raman scattering
and metal nanorod **arrays**
AUTHOR: Yao J L; Pan G P; Xue K H (Reprint); Wu D Y; Ren B; Sun D
M; Tang J; Xu X; Tian Z Q
CORPORATE SOURCE: NANJING NORMAL UNIV, DEPT CHEM, NANJING 210097, PEOPLES R
CHINA (Reprint); NANJING NORMAL UNIV, DEPT CHEM, NANJING
210097, PEOPLES R CHINA; XIAMEN UNIV, STATE KEY LAB PHYS
CHEM SOLID SURFACES, XIAMEN 361005, PEOPLES R CHINA;
XIAMEN UNIV, INST CHEM PHYS, XIAMEN 361005, PEOPLES R
CHINA
COUNTRY OF AUTHOR: PEOPLES R CHINA
SOURCE: PURE AND APPLIED CHEMISTRY, (JAN-FEB 2000) Vol. 72, No.
1-2, pp. 221-228.
Publisher: INT UNION PURE APPLIED CHEMISTRY, 104 TW
ALEXANDER DR, PO BOX 13757, RES TRIANGLE PK, NC 27709-3757
ISSN: 0033-4545.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS
LANGUAGE: English
REFERENCE COUNT: 35

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L9 ANSWER 62 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:610609 HCAPLUS
DOCUMENT NUMBER: 131:221340
TITLE: **Array** substrates for display devices and
their manufacture
INVENTOR(S): Machida, Masahiko
PATENT ASSIGNEE(S): Toshiba Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 11258625	A2	19990924	JP 1998-61107	19980312
PRIORITY APPLN. INFO.:			JP 1998-61107	19980312

L9 ANSWER 63 OF 88 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on
STN

ACCESSION NUMBER: 1999:688607 SCISEARCH
THE GENUINE ARTICLE: 232NY
TITLE: In situ fiber-optic oxygen consumption measurements from a
working mouse heart
AUTHOR: Zhao Y D; Richman A; Storey C; Radford N B; Pantano P
(Reprint)
CORPORATE SOURCE: UNIV TEXAS, DEPT CHEM, RICHARDSON, TX 75083 (Reprint);
UNIV TEXAS, DEPT CHEM, RICHARDSON, TX 75083; UNIV TEXAS,
SW MED CTR, MARY NELL & RALPH B ROGERS MAGNET RESONANCE
CTR, DEPT INTERNAL MED & RADIOL, DALLAS, TX 75235
COUNTRY OF AUTHOR: USA
SOURCE: ANALYTICAL CHEMISTRY, (1 SEP 1999) Vol. 71, No. 17, pp.
3887-3893.
Publisher: AMER CHEMICAL SOC, 1155 16TH ST, NW,

WASHINGTON, DC 20036.
ISSN: 0003-2700.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS; LIFE
LANGUAGE: English
REFERENCE COUNT: 50
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L9 ANSWER 64 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:259371 HCAPLUS
DOCUMENT NUMBER: 130:327165
TITLE: The structural stability of **transition metal** oxide insertion **electrodes** for lithium batteries
AUTHOR(S): Thackeray, M. M.
CORPORATE SOURCE: Electrochemical Technology Program, Chemical Technology Division, Argonne National Laboratory, Argonne, IL, 60439, USA
SOURCE: Handbook of Battery Materials (1999), 293-321.
Editor(s): Besenhard, Juergen O. Wiley-VCH: Weinheim, Germany.
CODEN: 67MGAX
DOCUMENT TYPE: Conference; General Review
LANGUAGE: English
REFERENCE COUNT: 122 THERE ARE 122 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 65 OF 88 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN DUPLICATE 11
ACCESSION NUMBER: 1999:887485 SCISEARCH
THE GENUINE ARTICLE: 254EZ
TITLE: Electrochemical characterization of lithiated **transition metal** oxide cathode particles in the absence of carbon, binders and other additives
AUTHOR: Totir D A (Reprint); Cahan B D; Scherson D A
CORPORATE SOURCE: CASE WESTERN RESERVE UNIV, DEPT CHEM, CLEVELAND, OH 44106 (Reprint)
COUNTRY OF AUTHOR: USA
SOURCE: ELECTROCHIMICA ACTA, (NOV 1999) Vol. 45, No. 1-2, pp. 161-166.
Publisher: PERGAMON-ELSEVIER SCIENCE LTD, THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, ENGLAND.
ISSN: 0013-4686.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS
LANGUAGE: English
REFERENCE COUNT: 19
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L9 ANSWER 66 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:429343 HCAPLUS
DOCUMENT NUMBER: 131:96587
TITLE: Electrochemical sensor **arrays**
AUTHOR(S): Stefan, Raluca-Ioana; Van Staden, Jacobus F.; Aboul-Enein, Hassan Y.
CORPORATE SOURCE: Department of Chemistry, University of Pretoria, Pretoria, 0002, S. Afr.
SOURCE: Critical Reviews in Analytical Chemistry (1999), 29(2), 133-153
CODEN: CCACBB; ISSN: 1040-8347
PUBLISHER: CRC Press LLC
DOCUMENT TYPE: Journal; General Review

LANGUAGE: English
REFERENCE COUNT: 134 THERE ARE 134 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE
FORMAT

L9 ANSWER 67 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1998:106122 HCAPLUS
DOCUMENT NUMBER: 128:143179
TITLE: Design of photoelectrochemical solar cell
INVENTOR(S): Brodie, Stephen Grant; Hamilton, Ian Campton; Boge,
Edward Michael; Riley, Peter John
PATENT ASSIGNEE(S): Broken Hill Pty. Co. Ltd., Australia; Brodie, Stephen
Grant; Hamilton, Ian Campton; Boge, Edward Michael;
Riley, Peter John
SOURCE: PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9805084	A1	19980205	WO 1997-AU465	19970725
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9735319	A1	19980220	AU 1997-35319	19970725
PRIORITY APPLN. INFO.:			AU 1996-1294	A 19960726
			WO 1997-AU465	W 19970725
REFERENCE COUNT:	11	THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT		

L9 ANSWER 68 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1998:684642 HCAPLUS
DOCUMENT NUMBER: 130:19730
TITLE: Manufacture of electron emitter devices, electron
sources with electron emitter devices, and manufacture
of imaging devices
INVENTOR(S): Tomita, Yoshinori
PATENT ASSIGNEE(S): Canon K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10283920	A2	19981023	JP 1997-105444	19970409
JP 3592030	B2	20041124		
PRIORITY APPLN. INFO.:			JP 1997-105444	19970409

L9 ANSWER 69 OF 88 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on
STN
ACCESSION NUMBER: 1998:278158 SCISEARCH
THE GENUINE ARTICLE: ZF315

TITLE: Solid-state voltammetry - Analytical prospects
 AUTHOR: Kulesza P J (Reprint); Cox J A
 CORPORATE SOURCE: UNIV WARSAW, DEPT CHEM, PASTEURA 1, PL-02093 WARSAW,
 POLAND (Reprint); MIAMI UNIV, DEPT CHEM, OXFORD, OH 45056
 COUNTRY OF AUTHOR: POLAND; USA
 SOURCE: ELECTROANALYSIS, (FEB 1998) Vol. 10, No. 2, pp. 73-80.
 Publisher: WILEY-V C H VERLAG GMBH, POSTFACH 10 11 61,
 D-69451 WEINHEIM, GERMANY.
 ISSN: 1040-0397.
 DOCUMENT TYPE: General Review; Journal
 FILE SEGMENT: PHYS
 LANGUAGE: English
 REFERENCE COUNT: 113

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L9 ANSWER 70 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1996:386122 HCAPLUS
 DOCUMENT NUMBER: 125:38044
 TITLE: Bipolar secondary lithium-ion batteries
 INVENTOR(S): Hossain, Sohrab
 PATENT ASSIGNEE(S): Yardney Technical Products, Inc., USA
 SOURCE: PCT Int. Appl., 28 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9612314	A1	19960425	WO 1995-US12561	19950929
W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT				
RW: KE, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
US 5595839	A	19970121	US 1995-456391	19950601
AU 9538246	A1	19960506	AU 1995-38246	19950929
EP 787365	A1	19970806	EP 1995-936221	19950929
EP 787365	B1	20010228		
R: CH, DE, FR, GB, IT, LI, SE				
JP 10512707	T2	19981202	JP 1995-513256	19950929
PRIORITY APPLN. INFO.:			US 1994-322587	A 19941013
			US 1995-456391	A 19950601
			WO 1995-US12561	W 19950929

L9 ANSWER 71 OF 88 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN
 ACCESSION NUMBER: 96:531443 SCISEARCH
 THE GENUINE ARTICLE: UW625
 TITLE: NOVEL, SELECTIVE AND COOPERATIVE ASSEMBLY OF CYCLODEXTRINS AROUND [1,8-BIS(PYRIDIN-2-YL)-3,6-DITHIAOCTANE] COPPER(II)
 AUTHOR: USHA S; PALANIANDAVAR M (Reprint)
 CORPORATE SOURCE: BHARATHIDASAN UNIV, DEPT CHEM, TIRUCHCHIRAPPALLI 620024, INDIA (Reprint); BHARATHIDASAN UNIV, DEPT CHEM, TIRUCHCHIRAPPALLI 620024, INDIA
 COUNTRY OF AUTHOR: INDIA
 SOURCE: JOURNAL OF THE CHEMICAL SOCIETY-DALTON TRANSACTIONS, (07 JUL 1996) No. 13, pp. 2609-2615.
 ISSN: 0300-9246.
 DOCUMENT TYPE: Article; Journal

FILE SEGMENT: PHYS
LANGUAGE: ENGLISH
REFERENCE COUNT: 55

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L9 ANSWER 72 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1995:750583 HCAPLUS
DOCUMENT NUMBER: 123:127805
TITLE: Electron emission member and image display device
INVENTOR(S): Tomita, Yasuko; Osada, Yoshuki
PATENT ASSIGNEE(S): Canon Kk, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07065699	A2	19950310	JP 1993-235960	19930830
PRIORITY APPLN. INFO.:			JP 1993-235960	19930830

L9 ANSWER 73 OF 88 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN
ACCESSION NUMBER: 95:540458 SCISEARCH
THE GENUINE ARTICLE: RN053
TITLE: SURFACE-ANALYSIS AND PHOTOELECTROCHEMICAL STUDIES OF MIXED POLYCRYSTALS OF P-WSE2/WS2
AUTHOR: SANTIAGOORTIZ Y (Reprint); TORRES G I; DIAZ A; CABRERA C R
CORPORATE SOURCE: UNIV PUERTO RICO, DEPT CHEM, SAN JUAN, PR, 00931 (Reprint); UNIV PUERTO RICO, CTR MAT RES, SAN JUAN, PR, 00931
COUNTRY OF AUTHOR: USA
SOURCE: JOURNAL OF THE ELECTROCHEMICAL SOCIETY, (AUG 1995) Vol. 142, No. 8, pp. 2770-2776.
ISSN: 0013-4651.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS; ENGI
LANGUAGE: ENGLISH
REFERENCE COUNT: 51

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L9 ANSWER 74 OF 88 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN
ACCESSION NUMBER: 94:233149 SCISEARCH
THE GENUINE ARTICLE: NB626
TITLE: SURFACE-ANALYSIS AND ELECTROCHEMISTRY OF MOS2 THIN-FILMS PREPARED BY INTERCALATION-EXFOLIATION TECHNIQUES
AUTHOR: SANTIAGO Y (Reprint); CABRERA C R
CORPORATE SOURCE: UNIV PUERTO RICO, DEPT CHEM, RIO PIEDRAS, PR, 00931 (Reprint); UNIV PUERTO RICO, MAT RES. CTR, RIO PIEDRAS, PR, 00931
COUNTRY OF AUTHOR: USA
SOURCE: JOURNAL OF THE ELECTROCHEMICAL SOCIETY, (MAR 1994) Vol. 141, No. 3, pp. 629-635.
ISSN: 0013-4651.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS; ENGI
LANGUAGE: ENGLISH
REFERENCE COUNT: 44

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L9 ANSWER 75 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1994:101273 HCAPLUS
 DOCUMENT NUMBER: 120:101273
 TITLE: Electrochemical treatment of surfaces for stepwise
 synthesis of oligonucleotides or other oligomers
 INVENTOR(S): Southern, Edwin
 PATENT ASSIGNEE(S): ISIS Innovation Ltd., UK
 SOURCE: PCT Int. Appl., 27 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9322480	A1	19931111	WO 1993-GB857	19930423
W: JP, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 637344	A1	19950208	EP 1993-911864	19930423
EP 637344	B1	19980107		
R: CH, DE, FR, GB, LI				
JP 07508071	T2	19950907	JP 1993-519050	19930423
US 5667667	A	19970916	US 1996-660946	19960718
PRIORITY APPLN. INFO.:			GB 1992-8921	A 19920424
			WO 1993-GB857	W 19930423
			US 1994-325337	B1 19941209

L9 ANSWER 76 OF 88 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN

ACCESSION NUMBER: 93:544043 SCISEARCH
 THE GENUINE ARTICLE: LU165
 TITLE: ELECTROCHEMICAL STUDIES OF ORGANOMETALLIC COMPOUNDS .9.
 ELECTROCHEMICAL PREPARATION AND CHARACTERIZATION OF
 BINUCLEAR PALLADIUM(I) COMPLEXES CONTAINING AROMATIC
 ISOCYANIDE AND CHELATING DIPHOSPHINE LIGANDS
 AUTHOR: TANASE T; KAWAHARA K; UKAJI H; KOBAYASHI K; YAMAZAKI H;
 YAMAMOTO Y (Reprint)
 CORPORATE SOURCE: TOHO UNIV, FAC SCI, DEPT CHEM, FUNABASHI, CHIBA 274, JAPAN
 COUNTRY OF AUTHOR: JAPAN
 SOURCE: INORGANIC CHEMISTRY, (18 AUG 1993) Vol. 32, No. 17, pp.
 3682-3688.
 ISSN: 0020-1669.
 DOCUMENT TYPE: Article; Journal
 FILE SEGMENT: PHYS
 LANGUAGE: ENGLISH
 REFERENCE COUNT: 41
 ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L9 ANSWER 77 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1993:466844 HCAPLUS
 DOCUMENT NUMBER: 119:66844
 TITLE: Development of N2 sensor for in vivo measurement of
 PN2 in biological tissues
 AUTHOR(S): Robblee, L. S.; Brunelle, M. M.; Jones, R. B.
 CORPORATE SOURCE: EIC Labs., Inc., Norwood, MA, USA
 SOURCE: Report (1992), Order No. AD-A248073, 34 pp. Avail.:
 NTIS
 From: Gov. Rep. Announce. Index (U. S.) 1992, 92(14),
 Abstr. No. 238,254
 DOCUMENT TYPE: Report
 LANGUAGE: English

L9 ANSWER 78 OF 88 NTIS COPYRIGHT 2005 NTIS on STN
 ACCESSION NUMBER: 1992(17):07823
 NTIS ORDER NUMBER: AD-A248 073/9/XAB
 TITLE: Development of N2 Sensor for In vivo Measurement of PN2
 in Biological Tissues. Final rept. 1 Aug 88-31 Oct 91.
 AUTHOR: Robblee, L. S.; Brunelle, M. M.; Jones, R. B.
 CORPORATE SOURCE: EIC Labs., Inc., Norwood, MA. (080940000 412102)
 NUMBER OF REPORT: AD-A248 073/9/XAB
 34p; 18 Mar 1992
 NUMBER OF CONTRACT: N00014-88-C-0403
 CONTROLLED TERM: Report
 COUNTRY: United States
 LANGUAGE: English
 AVAILABILITY: Order this product from NTIS by: phone at
 1-800-553-NTIS (U.S. customers); (703)605-6000 (other
 countries); fax at (703)605-6900; and email at
 orders@ntis.gov. NTIS is located at 5285 Port Royal
 Road, Springfield, VA, 22161, USA.
 NTIS Prices: PC A03/MF A01
 OTHER SOURCE: GRA&I9214

L9 ANSWER 79 OF 88 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on
 STN
 ACCESSION NUMBER: 92:196700 SCISEARCH
 THE GENUINE ARTICLE: HK023
 TITLE: SYNTHESIS AND CHARACTERIZATION OF LIMEO2 (ME = NI, NI/CO
 AND CO) FOR 4-VOLTS SECONDARY NONAQUEOUS LITHIUM CELLS
 AUTHOR: OHZUKU T (Reprint); KOMORI H; NAGAYAMA M; SAWAI K; HIRAI T
 CORPORATE SOURCE: OSAKA CITY UNIV, FAC ENGN, DEPT APPL CHEM, 3-3-138
 SUGIMOTO, SUMIYOSHI KU, OSAKA 558, JAPAN (Reprint)
 COUNTRY OF AUTHOR: JAPAN
 SOURCE: NIPPON SERAMIKKUSU KYOKAI GAKUJUTSU RONBUNSHI-JOURNAL OF
 THE CERAMIC SOCIETY OF JAPAN, (MAR 1992) Vol. 100, No. 3,
 pp. 346-349.
 ISSN: 0914-5400.
 DOCUMENT TYPE: Note; Journal
 FILE SEGMENT: ENGI
 LANGUAGE: Japanese
 REFERENCE COUNT: 10 Keyed
 ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L9 ANSWER 80 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1991:160323 HCAPLUS
 DOCUMENT NUMBER: 114:160323
 TITLE: Wholly microfabricated biosensors, and manufacture and
 use thereof
 INVENTOR(S): Cozzette, Stephen N.; Davis, Graham; Itak, Jeanne A.;
 Lauks, Imants R.; Mier, Randall M.; Piznik, Sylvia;
 Smit, Nicolaas; Steiner, Susan J.; Van der Werf, Paul;
 Wieck, Henry J.
 PATENT ASSIGNEE(S): I-Stat. Corp., USA
 SOURCE: PCT Int. Appl., 195 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9005910	A1	19900531	WO 1989-US5227	19891112
W: JP, KR				
RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				

US 5200051	A	19930406	US 1989-432714	19891107
EP 442969	A1	19910828	EP 1990-900548	19891113
EP 442969	B1	20020227		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
JP 04503249	T2	19920611	JP 1990-500757	19891113
JP 3105919	B2	20001106		
AT 213833	E	20020315	AT 1990-900548	19891113
CA 2002848	AA	19900514	CA 1989-2002848	19891114
CA 2002848	C	19990831		
CA 2221178	C	20010123	CA 1989-2221178	19891114
US 5063081	A	19911105	US 1990-567870	19900815
US 5212050	A	19930518	US 1990-568441	19900815
US 5466575	A	19951114	US 1992-943345	19920910
US 5554339	A	19960910	US 1993-109507	19930819
US 5837446	A	19981117	US 1995-482517	19950607
US 5837454	A	19981117	US 1995-484095	19950607
US 6306594	B1	20011023	US 1998-193370	19981117
JP 2000065791	A2	20000303	JP 1999-38753	19990217
JP 3137612	B2	20010226		
US 2002090738	A1	20020711	US 2001-941661	20010830
PRIORITY APPLN. INFO.:				
			US 1988-270171	A 19881114
			US 1989-381223	A 19890713
			US 1989-432714	19891107
			JP 1990-500757	A3 19891113
			WO 1989-US5227	W 19891113
			CA 1989-2002848	A3 19891114
			US 1992-943345	A3 19920910
			US 1995-484095	A3 19950607
			US 1998-193370	A1 19981117

OTHER SOURCE(S): MARPAT 114:160323

L9 ANSWER 81 OF 88 NTIS COPYRIGHT 2005 NTIS on STN
 ACCESSION NUMBER: 1989(20):01865
 NTIS ORDER NUMBER: PB89-219273/XAB
 TITLE: In-situ Spectroscopic Studies of **Transition Metal** Macrocycles as Catalysts for the Electrochemical Reduction of Dioxygen. Annual Report December 1987-November 1988.
 AUTHOR: Scherson, D. A.; Yeager, E.
 CORPORATE SOURCE: Case Western Reserve Univ., Cleveland, OH. Dept. of Chemistry.
 Sponsor: Gas Research Inst., Chicago, IL. (004688027)
 NUMBER OF REPORT: PB89-219273/XAB; GRI; 89/0123
 47p; May 1989
 NUMBER OF CONTRACT: GRI-5086-260-1403
 CONTROLLED TERM: Report
 COUNTRY: United States
 LANGUAGE: English
 NOTES: See also PB88-203195. Sponsored by Gas Research Inst., Chicago, IL.
 AVAILABILITY: Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.
 NTIS Prices: PC A03/MF A01
 OTHER SOURCE: GRA&I8921

L9 ANSWER 82 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1990:115305 HCAPLUS
 DOCUMENT NUMBER: 112:115305
 TITLE: Receptor membranes for bisensor devices
 INVENTOR(S): Cornell, Bruce Andrew; Braach-Maksvytis, Vijoleta

PATENT ASSIGNEE(S): Lucija Bronislava
Commonwealth Scientific and Industrial Research
Organization, Australia
SOURCE: PCT Int. Appl., 40 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 8901159	A1	19890209	WO 1988-AU273	19880727
W: AU, JP, US				
RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
AU 8821279	A1	19890301	AU 1988-21279	19880727
AU 617687	B2	19911205		
EP 382736	A1	19900822	EP 1988-907164	19880727
EP 382736	B1	19941102		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
JP 03503209	T2	19910718	JP 1988-506329	19880727
CA 1335879	A1	19950613	CA 1988-573217	19880727
US 5436170	A	19950725	US 1990-473932	19900125
PRIORITY APPLN. INFO.:			AU 1987-3346	A 19870727
			AU 1987-3348	A 19870727
			AU 1987-3453	A 19870731
			AU 1987-4478	A 19870921
			WO 1988-AU273	A 19880727

L9 ANSWER 83 OF 88 . NTIS COPYRIGHT 2005 NTIS on STN
ACCESSION NUMBER: 1988(17):02015
NTIS ORDER NUMBER: PB88-203195/XAB
TITLE: In situ Spectroscopic Studies of **Transition Metal** Macrocycles as Catalysts for the Electrochemical Reduction of Oxygen. Annual Report December 1986-November 1987.
AUTHOR: Scherson, D. A.; Yeager, E. B.
CORPORATE SOURCE: Case Western Reserve Univ., Cleveland, OH. Dept. of Chemical Engineering.
Sponsor: Gas Research Inst., Chicago, IL. (004688102)
NUMBER OF REPORT: PB88-203195/XAB; GRI; 88/0066
35p; Apr 1988
NUMBER OF CONTRACT: GRI-5086-260-1403
CONTROLLED TERM: Report
COUNTRY: United States
LANGUAGE: English
NOTES: Sponsored by Gas Research Inst., Chicago, IL.
AVAILABILITY: Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.
NTIS Prices: PC A03/MF A01
OTHER SOURCE: GRA&I8815

L9 ANSWER 84 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1988:84087 HCAPLUS
DOCUMENT NUMBER: 108:84087
TITLE: Electrochemical pretreatment of thin film platinum **electrodes**
AUTHOR(S): Josowicz, Mira; Janata, Jiri; Levy, Max
CORPORATE SOURCE: Inst. Phys., Univ. Bundeswehr Muenchen, Neubiberg, D-8014, Fed. Rep. Ger.

SOURCE: Journal of the Electrochemical Society (1988), 135(1),
112-15
CODEN: JESOAN; ISSN: 0013-4651
DOCUMENT TYPE: Journal
LANGUAGE: English

L9 ANSWER 85 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1987:203958 HCAPLUS
DOCUMENT NUMBER: 106:203958
TITLE: Solid-state linear sweep voltammetry: a probe of
diffusion in thin films of polymer ion conductors on
microdisk **electrodes**
AUTHOR(S): Geng, L.; Reed, R. A.; Longmire, M.; Murray, Royce W.
CORPORATE SOURCE: Kenan Lab. Chem., Univ. North Carolina, Chapel Hill,
NC, 27514, USA
SOURCE: Journal of Physical Chemistry (1987), 91(11), 2908-14
CODEN: JPCHAX; ISSN: 0022-3654
DOCUMENT TYPE: Journal
LANGUAGE: English

L9 ANSWER 86 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1988:15025 HCAPLUS
DOCUMENT NUMBER: 108:15025
TITLE: Local magnetic behavior of **transition-**
metal impurities in nickel
AUTHOR(S): Zeller, R.
CORPORATE SOURCE: Inst. Festkoerperforsch., Kernforschungsanlage
Juelich, Juelich, D-5170, Fed. Rep. Ger.
SOURCE: Journal of Physics F: Metal Physics (1987), 17(10),
2123-37
CODEN: JPFMAT; ISSN: 0305-4608
DOCUMENT TYPE: Journal
LANGUAGE: English

L9 ANSWER 87 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1986:615751 HCAPLUS
DOCUMENT NUMBER: 105:215751
TITLE: Selectively plating an annular area
INVENTOR(S): Maetani, Kazuo; Wada, Keisuke
PATENT ASSIGNEE(S): Sumitomo Metal Mining Co., Ltd., Japan
SOURCE: Brit. UK Pat. Appl., 9 pp.
CODEN: BAXXDU
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2170513	A1	19860806	GB 1986-1963	19860128
GB 2170513	B2	19881214		
JP 61177390	A2	19860809	JP 1985-17394	19850131
JP 05017318	B4	19930308		
JP 61177391	A2	19860809	JP 1985-17395	19850131
PRIORITY APPLN. INFO.:			JP 1985-12537	U 19850131
			JP 1985-17394	A 19850131
			JP 1985-17395	A 19850131

L9 ANSWER 88 OF 88 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1981:606863 HCAPLUS
DOCUMENT NUMBER: 95:206863
TITLE: Secondary batteries
INVENTOR(S): Kaun, Thomas D.; Eshman, Paul F.

PATENT ASSIGNEE(S): United States Dept. of Energy, USA
 SOURCE: U. S. Pat. Appl., 21 pp. Avail. NTIS Order No.
 PAT-APPL-148 325.
 CODEN: XAXXAV
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 148325	A0	19810814	US 1980-148325	19800509
US 4313259	A	19820202		
GB 2075745	A	19811118	GB 1981-13588	19810501
GB 2075745	B2	19830727		
CA 1148609	A1	19830621	CA 1981-377045	19810507
JP 57061271	A2	19820413	JP 1981-69270	19810508
JP 02061101	B4	19901219		
DE 3118548	A1	19820624	DE 1981-3118548	19810509
DE 3118548	C2	19891207		
PRIORITY APPLN. INFO.:			US 1980-148325	A 19800509

=> d his

(FILE 'HOME' ENTERED AT 09:59:33 ON 01 JUL 2005)

FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS, LIFESCI' ENTERED AT 10:00:00 ON 01 JUL 2005

L1 1033750 S ELECTRODE?
 L2 442634 S ARRAY?
 L3 23852 S L1 AND L2
 L4 4941 S SOLVENT (2W)ACCESSIBLE
 L5 3 S L3 AND L4
 L6 1 DUP REM L5 (2 DUPLICATES REMOVED)
 L7 248883 S TRANSITION (W)METAL?
 L8 101 S L3 AND L7
 L9 88 DUP REM L8 (13 DUPLICATES REMOVED)

=> s ligand?

L10 1129452 LIGAND?

=> s l9 and l10

L11 11 L9 AND L10

=> d 1-11 ibib ab

L11 ANSWER 1 OF 11 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN

ACCESSION NUMBER: 2004:930027 SCISEARCH

THE GENUINE ARTICLE: 861BU

TITLE: Ordered **arrays** of semi-crown **ligands**
 on an Au(111) **electrode** surface: in situ STM
 study

AUTHOR: Pan G B; Li H J; Yuan Q H; Chen Y J (Reprint); Wan L J;
 Bai C L

CORPORATE SOURCE: Chinese Acad Sci, Inst Chem, Beijing 100080, Peoples R
 China (Reprint)

COUNTRY OF AUTHOR: Peoples R China

SOURCE: SCIENCE IN CHINA SERIES B-CHEMISTRY, (AUG 2004) Vol. 47,
 No. 4, pp. 320-325.
 Publisher: SCIENCE CHINA PRESS, 16 DONGHUANGCHENGGEN NORTH
 ST, BEIJING 100717, PEOPLES R CHINA.

ISSN: 1006-9291.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 17

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB In situ scanning tunneling microscopy (STM) and cyclic voltammetry were employed to investigate the adsorption structures of three semi-crown **ligands** on an Au(111) surface under the potential control. It is found that all the molecules formed ordered **arrays** in 0.1 mol/L HClO₄ solution, although their geometric structures are complex and asymmetric. The driving force was supposed to come from the balance between intermolecular and molecule-substrate interactions. High resolution STM images revealed internal molecular structures, orientations and packing arrangements in the ordered adlayers. The results are useful for preparing ordered **arrays** of **transition metal**-mediated nanostructures.

L11 ANSWER 2 OF 11 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN

ACCESSION NUMBER: 2004:293057 SCISEARCH

THE GENUINE ARTICLE: 804NI

TITLE: Molecular insights for how preferred oxoanions bind to and stabilize **transition-metal** nanoclusters: a tridentate, C-3 symmetry, lattice size-matching binding model

AUTHOR: Finke R G (Reprint); Ozkar S

CORPORATE SOURCE: Colorado State Univ, Dept Chem, Ft Collins, CO 80523 USA (Reprint); Middle E Tech Univ, Dept Chem, TR-06531 Ankara, Turkey

COUNTRY OF AUTHOR: USA; Turkey

SOURCE: COORDINATION CHEMISTRY REVIEWS, (JAN 2004) Vol. 248, No. 1-2, pp. 135-146.
Publisher: ELSEVIER SCIENCE SA, PO BOX 564, 1001 LAUSANNE, SWITZERLAND.
ISSN: 0010-8545.

DOCUMENT TYPE: General Review; Journal

LANGUAGE: English

REFERENCE COUNT: 78

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The recent discovery of an anion efficacy series for the formation and stabilization of **transition-metal** Ir(0)(n) nanoclusters, specifically P₂W₁₅Nb₃O₆₂- similar to SiW₉Nb₃O₄₀- > C₆H₅O₇³⁻ > [-CH₂CH(CO₂⁻)](n)(n-) similar to OAc- similar to P₃O₉³⁻ similar to Cl- similar to OH--that is, polyoxoanions > citrate(3-) > other commonly employed nanocluster stabilizing anions, raises the question of what are the underlying factors behind this preferred order of stabilizers? A brief discussion of three relevant nanocluster papers in the literature, plus a concise summary of the relevant interfacial electrochemistry and surface science literature of C-3 symmetry SO₄²⁻ binding to Ir(111) (as well as to Rh(111), Pt(111), Au(111) and Cu(111)), are presented first as key background for the lattice size-matching model which follows in which tridentate anions coordinate to **transition-metal** nanocluster surfaces. A table of nanocluster formation and stabilization data for tridentate oxoanion stabilizers is presented, results which allow two fundamental, previously unavailable, important insights (out of 10 total insights): (i) the premier anionic stabilizers of **transition-metal**(0) nanoclusters present a tridentate, facial **array** of oxygen atoms for coordination to the metal(0) surface; and (ii) the preferred tridentate oxoanion stabilizers of nanoclusters are those that have the best match between the **ligand** O-O and surface Ir-Ir distances, all other factors being equal-that is, there is a previously unappreciated, geometric, anion-to-surface-metal lattice-size-matching component to the best anionic

stabilizers of **transition-metal** nanoclusters. These are the first molecular-level insights for how the to-date premier tridentate, anionic stabilizers of **transition-metal** nanoclusters achieve their higher level of stabilization-a non-trivial advance since there was a lack previously of molecular-level insights into how **transition-metal** nanoclusters are stabilized. Four experimentally testable predictions of the C-3 symmetry, lattice size-matching model for nanocluster M(111) surfaces are presented and briefly discussed. One key prediction is that HPO42- is a heretofore unappreciated simple, effective and readily available stabilizer of Ir(0) and other **transition-metal** nanoclusters where there is a lattice-size match between the O-O and the surface M-M distances. Recent experimental evidence is summarized revealing that this prediction is, in fact, trite-that is, the third key, new finding of this work is (iii) the first rational design of a new nanocluster stabilizer, HPO42-, one shown to be as good a stabilizer as the common nanocluster stabilizer citrate(3-). The C-3 symmetry, lattice size-matching model is significant in seven additional ways which are detailed in the text and summary which follows. (C) 2003 Elsevier B.V. All rights reserved.

L11 ANSWER 3 OF 11 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN
 ACCESSION NUMBER: 96:531443 SCISEARCH
 THE GENUINE ARTICLE: UW625
 TITLE: NOVEL, SELECTIVE AND COOPERATIVE ASSEMBLY OF CYCLODEXTRINS AROUND [1,8-BIS(PYRIDIN-2-YL)-3,6-DITHIAOCTANE] COPPER(II)
 AUTHOR: USHA S; PALANIANDAVAR M (Reprint)
 CORPORATE SOURCE: BHARATHIDASAN UNIV, DEPT CHEM, TIRUCHCHIRAPPALLI 620024, INDIA (Reprint); BHARATHIDASAN UNIV, DEPT CHEM, TIRUCHCHIRAPPALLI 620024, INDIA
 COUNTRY OF AUTHOR: INDIA
 SOURCE: JOURNAL OF THE CHEMICAL SOCIETY-DALTON TRANSACTIONS, (07 JUL 1996) No. 13, pp. 2609-2615.
 ISSN: 0300-9246.
 DOCUMENT TYPE: Article; Journal
 FILE SEGMENT: PHYS
 LANGUAGE: ENGLISH
 REFERENCE COUNT: 55

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The redox chemistry of [CuL] (2+) [L = pdto = 1,8-bis(pyridin-2-yl)-3,6-dithiaoctane, bbdo = 1,8-bis(benzimidazol-2-yl)-3,6-dithiaoctane, pttu = 1,9-bis(pyridin-2-yl)-2,5,8-trithianonane or pttu = 1,11-bis(pyridin-2-yl)-3,6,9-trithiaundecane] in the presence of alpha-, beta- and gamma-cyclodextrins (cd) in aqueous solution has been extensively investigated by cyclic and differential pulse voltammetric techniques. The addition of cyclodextrins to the complexes results in a substantial decrease in peak currents rather than in peak potentials. The $i(p_a)$ rather than $i(p_c)$ or $\Delta E(p)$ or $E(1/2)$ is very sensitive to the variation in the cyclodextrin concentration. The couple Cu-II-Cu-I of [Cu(pdto)] (2+) tends to become reversible, as shown by the decrease in $\Delta E(p)$ and that of $i(p_a)/i(p_c)$ towards unity. Plots of $i(p_a)$, $i(p_c)$, $E(p_a)$ and $\Delta E(p)$ vs. the number of moles of cyclodextrin show sharp inflections, interestingly at 5, 4 and 3 mol of alpha-, beta- and gamma-cd respectively. These limiting values do not correspond to the usual inclusion complex formation by cyclodextrins but to the formation of novel and regular **arrays** around the complex, the number of molecules in the **array** being dictated by the size of the cyclodextrin. This also illustrates the prevention of adsorption of [Cu(pdto)] (+) on the glassy carbon **electrode**. For the other complexes the changes in redox properties in the presence of cyclodextrins are not as regular and significant. Plots of changes in $i(p_a)$ and $i(p_c)$ vs. cyclodextrin concentration give Hill's coefficients greater than unity (1.3-2.1). The values of $K+/K-2+$ for all the complexes and $K-a(K-2+)$ for the complex

formation of [Cu(pdto)](2+) with cyclodextrins have been determined and discussed. Significant reduction or enhancement in epsilon(max) values has been observed both for the **ligand**-field and charge-transfer bands in the presence of all three cyclodextrins.

L11 ANSWER 4 OF 11 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN

ACCESSION NUMBER: 93:544043 SCISEARCH

THE GENUINE ARTICLE: LU165

TITLE: ELECTROCHEMICAL STUDIES OF ORGANOMETALLIC COMPOUNDS .9.
ELECTROCHEMICAL PREPARATION AND CHARACTERIZATION OF
BINUCLEAR PALLADIUM(I) COMPLEXES CONTAINING AROMATIC
ISOCYANIDE AND CHELATING DIPHOSPHINE **LIGANDS**

AUTHOR: TANASE T; KAWAHARA K; UKAJI H; KOBAYASHI K; YAMAZAKI H;
YAMAMOTO Y (Reprint)

CORPORATE SOURCE: TOHO UNIV, FAC SCI, DEPT CHEM, FUNABASHI, CHIBA 274, JAPAN

COUNTRY OF AUTHOR: JAPAN

SOURCE: INORGANIC CHEMISTRY, (18 AUG 1993) Vol. 32, No. 17, pp.
3682-3688.

ISSN: 0020-1669.

DOCUMENT TYPE: Article; Journal

FILE SEGMENT: PHYS

LANGUAGE: ENGLISH

REFERENCE COUNT: 41

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB A controlled-potential electrolysis was performed on mononuclear palladium(II) complexes containing aromatic isocyanide (RNC) and diphosphine (diphos) **ligands**, [Pd(diphos)(RNC)2](PF6)2 (3) (R = 2,6-dimethylphenyl or 2,4,6-trimethylphenyl, diphos = cis-1,2-bis(diphenylphosphino)ethene (dppen), 1,2-bis(diphenylphosphino)ethane (dppe), 1,3-bis(diphenylphosphino)propane(dppp), or 1,4-bis(diphenylphosphino)butane(dppb)), which were derived from the reaction of PdCl2(COD) with diphos, RNC, and NH4PF6. A controlled-potential electrolysis of the complex 3 at a platinum-plate **electrode** consumed 1 F mol⁻¹ in acetonitrile at -1.6 V (vs Cp2Fe/CP2Fe+), which gave a binuclear palladium(I) complex, [Pd2(diphos)2(RNC)2](PF6)2 (6). They were characterized by IR, electronic, and H-1 and P-31{H-1} NMR spectroscopies and X-ray crystallographic and EXAFS (extended X-ray absorption fine structure) analysis. The complex 6a (R = 2,6-Me2C6H3, diphos = dppen) crystallizes in the triclinic system, space group P1BAR, with a = 21.346(5) angstrom, b = 14.798(3) angstrom, c = 12.498(3) angstrom, alpha = 71.40(2)-degrees, beta = 103.14(2)-degrees, gamma = 82.92(2)-degrees, and Z = 2 (R = 0.064 and R(w) = 0.075 for 7052 independent reflections with I > 2.5sigma(I)), and the complex 6e (R = 2,4,6-Me3C6H2, diphos = dppp) crystallizes in the monoclinic system, space group P2(1)/a, with a = 25.963(11) angstrom, b = 19.247(4) angstrom, c = 14.963(9) angstrom, beta = 101.49(4)-degrees, and Z = 4 (R = 0.055 and R(w) = 0.058 for 6885 independent reflections with I > 1.5sigma(I)). The complexes 6 consist of two palladium atoms, each of them being coordinated by one isocyanide, one diphosphine, and the neighboring palladium atom in a square planar **array**. The diphosphines acted as chelating **ligands**. The lengths of the Pd-Pd bond fall within the range 2.59-2.62 angstrom, indicating that the Pd-Pd bond was hardly affected by the length of carbon chains of chelating diphosphines.

L11 ANSWER 5 OF 11 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:924935 HCAPLUS

DOCUMENT NUMBER: 142:81232

TITLE: Electrochemical Redox Control of Ferrocene Using a
Supramolecular Assembly of Ferrocene-Linked C60
Derivative and Metalloctaethylporphyrin **Array**
on a Au(111) **Electrode**

AUTHOR(S): Yoshimoto, Soichiro; Saito, Akira; Tsutsumi, Eishi;

CORPORATE SOURCE: D'Souza, Francis; Ito, Osamu; Itaya, Kingo
Department of Applied Chemistry, Graduate School of
Engineering, Tohoku University, Sendai, 980-8579,
Japan
SOURCE: Langmuir (2004), 20(25), 11046-11052
CODEN: LANGD5; ISSN: 0743-7463
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Supramol. assembled layers of ferrocene-linked C60 derivative (C60Fc) and various metal ions coordinated to octaethylporphyrin (MOEP) were formed on the surface of a Au(111) single-crystal **electrode** by immersing the Au substrate successively into a benzene solution containing MOEP and one containing C60Fc mols. The MOEPs used were Zn(II) (ZnOEP), Co(II) (CoOEP), Cu(II) (CuOEP), and Fe(III) chloride (FeClOEP) of H2OEP (2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphine). The mols. of C60Fc directly attached to the Au(111) **electrode** showed poorly defined electrochem. redox response, whereas a clear electrochem. redox reaction of the ferrocene group in the C60Fc mol. was observed at 0.78 V vs. reversible H **electrode** on ZnOEP, CoOEP, and CuOEP adlayers, but not on the FeClOEP adlayer. Adlattices of the underlying layer and the top layer of C60Fc were determined by in situ scanning tunneling microscopy. Adlayer structures of MOEP were independent of the central metal ion; i.e., MOEP mols. were arranged hexagonally with 2 different orientations. Highly ordered C60Fc **arrays** were formed with 1:1 composition on the ZnOEP-, CoOEP-, and CuOEP-modified Au(111) surface, whereas a disordered structure of C60Fc was found on the FeClOEP-modified Au(111) surface. The presence of Cl **ligand** was found to prevent the formation of supramolecularly assembled layers with C60Fc mols., resulting in an ill-defined unclear electrochem. response of the Fc group. The well-defined electrochem. response of the Fc group in C60Fc was clearly due to the control of orientation of C60Fc mols.

REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 6 OF 11 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:793411 HCAPLUS
DOCUMENT NUMBER: 139:287272
TITLE: Electrochemical detection of nucleic acid
hybridization using probe **arrays** immobilized
on **electrodes**
INVENTOR(S): Hartwich, Gerhard
PATENT ASSIGNEE(S): Friz Biochem GmbH, Germany
SOURCE: Ger. Offen., 8 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10212958	A1	20031009	DE 2002-10212958	20020322
PRIORITY APPLN. INFO.:			DE 2002-10212958	20020322

AB A procedure for the electrochem. detection of nucleic acid hybridization using microarrays immobilized on **electrode** surfaces is described. An **electrode**, such as a gold-coated mica, is used as the surface on which a microarray is immobilized. The **array** is then hybridized with an excess of sample nucleic acids and hybridization is detected by measuring changes in redox potential using an indicator such as a redox dye or a **transition metal** salt.

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS

L11 ANSWER 7 OF 11 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:634112 HCAPLUS

TITLE: Bio-inspired sensor based on bioinorganic model complexes and **array** of carbon nanotube **electrodes**

AUTHOR(S): Roy, Sudeshna; Jessica, Koehne; Mascharak, Pradip K.; Nguyen, Cattien V.; Meyyappan, M.

CORPORATE SOURCE: Center for Nanotechnology, ELORET Corp./NASA Ames Research Center, Moffett Field, CA, 94035, USA

SOURCE: Abstracts of Papers, 226th ACS National Meeting, New York, NY, United States, September 7-11, 2003 (2003), INOR-254. American Chemical Society: Washington, D. C.

CODEN: 69EKY9

DOCUMENT TYPE: Conference; Meeting Abstract

LANGUAGE: English

AB The last few decades have seen tremendous progress in the synthesis of functional and structural models of inorg. complexes relating to biol. Numerous models of active sites of metallo-enzymes and metallo-drugs have been successfully synthesized. In this paper we extend bioinorg. chemical with nanotechnol. by chemical coupling of the bio-inspired **transition-metal** model complexes to carbon nanotube based **electrodes**. The ultimate goal here is to create a functional model of metallo-enzymes that have elec. addressable metal active sites. In preliminary studies, we have used Co based complexes with varying **ligand** compns. for this purpose, as Co is both redox-active and known to bind/activate oxygen, in similar manner to oxygenase family of enzymes. The complexes are tethered to an **array** of chemical functionalized oxidatively opened carbon nanotubes. Carbon nanotube based **electrodes** are robust, have well-defined geometry and can be fabricated in high yield. These properties have also encouraged us to probe the use of functionalized carbon nanotubes as electrochem. sensors for small mols. like H₂O, O₂, ROOR and NO. This part of the study therefore represents a novel and versatile route to sensitive detection of trace amts. of these mols. and shows great promise for expansion to include various other chemical and biochem. moieties.

L11 ANSWER 8 OF 11 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:435309 HCAPLUS

DOCUMENT NUMBER: 135:43123

TITLE: Methods and compositions relating to electrical detection of nucleic acid hybridization or peptide binding preferably using AC impedance

INVENTOR(S): Choong, Vi-en; Gallagher, Sean; Gaskin, Mike; Li, Changming; Maracas, George; Shi, Song

PATENT ASSIGNEE(S): Motorola, Inc., USA

SOURCE: PCT Int. Appl., 63 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001042508	A2	20010614	WO 2000-US33497	20001211
WO 2001042508	A3	20020314		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,				

SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,
 YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
 BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
 US 2002051975 A1 20020502 US 1999-458533 19991209
 US 2002064775 A1 20020530 US 1999-459685 19991213
 US 6518024 B2 20030211
 CA 2393733 AA 20010614 CA 2000-2393733 20001211
 EP 1238114 A2 20020911 EP 2000-993326 20001211
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
 JP 2003516165 T2 20030513 JP 2001-544379 20001211
 US 2003096283 A1 20030522 US 2002-259532 20020927
 US 2003209432 A1 20031113 US 2003-149319 20030228
 PRIORITY APPLN. INFO.: US 1999-458501 A 19991209
 US 1999-458533 A 19991209
 US 1999-459685 A 19991213
 WO 2000-US33497 W 20001211

AB This invention relates to the elec. detection of mol. interactions between
 biol. mols. The method generally rely on the mol. interactions such as
 nucleic acid hybridization or protein-protein (for example,
 antigen-antibody) binding reactions done on solid supports using
arrays of peptides or oligonucleotides for capture binding
ligands. As a result of these interactions, some electronic
 property of the system changes, and detection is achieved. In a preferred
 embodiment, the methods of the invention utilize AC impedance for the
 detection. In some embodiments, no electrochem. or other label moieties
 are used. In others, electrochem. active (ECA) labels are used to detect
 reactions on hydrogel **arrays**, including genotyping reactions
 such as the single base extension reaction.

L11 ANSWER 9 OF 11 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:314168 HCAPLUS

DOCUMENT NUMBER: 134:327946

TITLE: Ordered **arrays** via metal-initiated
 self-assembly of **ligand** containing
 dendrimers and bridging **ligands**

INVENTOR(S): Diaz, Diego; Storrier, Gregory D.; Takada, Kazutake;
 Bernhard, Stefan; Abruna, Hector D.

PATENT ASSIGNEE(S): Cornell Research Foundation, Inc., USA

SOURCE: U.S., 9 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6224935	B1	20010501	US 2000-488927	20000121
PRIORITY APPLN. INFO.:			US 1999-117644P	P 19990128

AB An ordered film is formed on a surface by reacting (a) dendrimer or
 bridging **ligand** functionalized for reaction with
transition metal ions (e.g., terpyridyl-pendant
 poly-amido amine starburst dendrimers or 1,4-bis[4,4"-bis(1,1-
 dimethylethyl)-2,2':6'2"-terpyridine-4'-yl]benzene), dissolved in H2O
 immiscible solvent, with (b) **transition metal** ions
 dissolved in H2O, on the surface. This method gave films useful, for
 example, as electron transfer mediators, other electronic devices,
 catalysts, sensors, and electrochromic devices.

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 10 OF 11 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1998:684642 HCAPLUS

DOCUMENT NUMBER: 130:19730

TITLE: Manufacture of electron emitter devices, electron sources with electron emitter devices, and manufacture of imaging devices

INVENTOR(S): Tomita, Yoshinori

PATENT ASSIGNEE(S): Canon K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10283920	A2	19981023	JP 1997-105444	19970409
JP 3592030	B2	20041124		

PRIORITY APPLN. INFO.: JP 1997-105444 19970409

AB The title process comprises application of drips of a solution which contains

a metal salt peptide compound from a peptide (e.g., as chelate **ligands**) formed by condensation of 2 amino acids, onto desired positions using a bubble-jet device in preparation of an electron-emitting conductive film connected to opposite device **electrodes**. The emitter may be a surface conduction type, and 1 of the opposite device **electrodes** is connected to a wiring and the other is connected to the other wiring to form **arrays** of the emitters to a ladder shape or a matrix for the electron source, and the imaging device has a luminescent panel and a driving circuit to control voltages being applied to the electron source based on outer signals.

L11 ANSWER 11 OF 11 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1991:160323 HCAPLUS

DOCUMENT NUMBER: 114:160323

TITLE: Wholly microfabricated biosensors, and manufacture and use thereof

INVENTOR(S): Cozzette, Stephen N.; Davis, Graham; Itak, Jeanne A.; Lauks, Imants R.; Mier, Randall M.; Piznik, Sylvia; Smit, Nicolaas; Steiner, Susan J.; Van der Werf, Paul; Wieck, Henry J.

PATENT ASSIGNEE(S): I-Stat Corp., USA

SOURCE: PCT Int. Appl., 195 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9005910	A1	19900531	WO 1989-US5227	19891112
W: JP, KR				
RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
US 5200051	A	19930406	US 1989-432714	19891107
EP 442969	A1	19910828	EP 1990-900548	19891113
EP 442969	B1	20020227		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
JP 04503249	T2	19920611	JP 1990-500757	19891113
JP 3105919	B2	20001106		
AT 213833	E	20020315	AT 1990-900548	19891113

CA 2002848	AA	19900514	CA 1989-2002848	19891114
CA 2002848	C	19990831		
CA 2221178	C	20010123	CA 1989-2221178	19891114
US 5063081	A	19911105	US 1990-567870	19900815
US 5212050	A	19930518	US 1990-568441	19900815
US 5466575	A	19951114	US 1992-943345	19920910
US 5554339	A	19960910	US 1993-109507	19930819
US 5837446	A	19981117	US 1995-482517	19950607
US 5837454	A	19981117	US 1995-484095	19950607
US 6306594	B1	20011023	US 1998-193370	19981117
JP 2000065791	A2	20000303	JP 1999-38753	19990217
JP 3137612	B2	20010226		
US 2002090738	A1	20020711	US 2001-941661	20010830
PRIORITY APPLN. INFO.:			US 1988-270171	A 19881114
			US 1989-381223	A 19890713
			US 1989-432714	19891107
			JP 1990-500757	A3 19891113
			WO 1989-US5227	W 19891113
			CA 1989-2002848	A3 19891114
			US 1992-943345	A3 19920910
			US 1995-484095	A3 19950607
			US 1998-193370	A1 19981117

OTHER SOURCE(S): MARPAT 114:160323

AB A microfabricated biosensor which may be uniformly mass produced comprises (a) a base sensor (e.g. an electrochem. transducer); (b) a permselective layer (e.g. a polymer film) optionally containing an ionophore, superimposed over at least part of layer (a) and sufficiently thick to pass mols. of mol. weight ≤ 50 and exclude mols. of mol. weight ≥ 120 ; and (c) a biolayer covering at least part of layer (b). The biolayer comprises (i) a bioactive mol. which selectively interacts with an analyte and (ii) a support matrix derived from a photoformable proteinaceous mixture and/or a film-forming latex through which the analyte can permeate. An electrolyte layer may be interposed between layers (a) and (b). Layer (c) may addnl. be covered by a layer which attenuates analyte transport and a photoresist cap. Layer (b) prevents electroactive interfering species from undergoing redox reactions at the indicator **electrode**. Methods for conducting assays (e.g. immunoassays) using the sensors are described. Thus, the base sensor for a glucose sensor comprised an **array** of unit cells on a Si wafer; each unit cell consisted of an Ag/AgCl reference/counter **electrode** and 2 Ir catalytic **electrodes** prepared by plasma deposition or sputtering and standard lithog. techniques including spin-coating with a pos. photoresist. Layer (b) was prepared by spin-coating an alc. solution of N-(2-aminoethyl)-3-aminopropyltrimethoxysilane onto the wafer and baking. Layer (c) was prepared from a mixture of fish gelatin and ferric ammonium citrate (photoinitiator) to which were added glucose oxidase, crosslinking agent (N,N'-methylenebisacrylamide), and a sugar alc. (to alter the porosity). An attenuation layer contained dimethylsiloxane-bisphenol A carbonate copolymer.

=> d his

(FILE 'HOME' ENTERED AT 09:59:33 ON 01 JUL 2005)

FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS, LIFESCI' ENTERED AT 10:00:00 ON 01 JUL 2005

L1	1033750 S ELECTRODE?
L2	442634 S ARRAY?
L3	23852 S L1 AND L2
L4	4941 S SOLVENT (2W)ACCESSIBLE
L5	3 S L3 AND L4
L6	1 DUP REM L5 (2 DUPLICATES REMOVED)

L7 248883 S TRANSITION (W)METAL?
L8 101 S L3 AND L7
L9 88 DUP REM L8 (13 DUPLICATES REMOVED)
L10 1129452 S LIGAND?
L11 11 S L9 AND L10

=> s 19 and coordination

L12 2 L9 AND COORDINATION

=> d 1-2 ibib ab

L12 ANSWER 1 OF 2 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on
STN

ACCESSION NUMBER: 2004:930027 SCISEARCH

THE GENUINE ARTICLE: 861BU

TITLE: Ordered **arrays** of semi-crown ligands on an
Au(111) **electrode** surface: in situ STM study

AUTHOR: Pan G B; Li H J; Yuan Q H; Chen Y J (Reprint); Wan L J;
Bai C L

CORPORATE SOURCE: Chinese Acad Sci, Inst Chem, Beijing 100080, Peoples R
China (Reprint)

COUNTRY OF AUTHOR: Peoples R China

SOURCE: SCIENCE IN CHINA SERIES B-CHEMISTRY, (AUG 2004) Vol. 47,
No. 4, pp. 320-325.

Publisher: SCIENCE CHINA PRESS, 16 DONGHUANGCHENGGEN NORTH
ST, BEIJING 100717, PEOPLES R CHINA.

ISSN: 1006-9291.

DOCUMENT TYPE: Article; Journal

LANGUAGE: English

REFERENCE COUNT: 17

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB In situ scanning tunneling microscopy (STM) and cyclic voltammetry were
employed to investigate the adsorption structures of three semi-crown
ligands on an Au(111) surface under the potential control. It is found
that all the molecules formed ordered **arrays** in 0.1 mol/L HClO₄
solution, although their geometric structures are complex and asymmetric.
The driving force was supposed to come from the balance between
intermolecular and molecule-substrate interactions. High resolution STM
images revealed internal molecular structures, orientations and packing
arrangements in the ordered adlayers. The results are useful for preparing
ordered **arrays** of **transition metal**-mediated
nanostructures.

L12 ANSWER 2 OF 2 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on
STN

ACCESSION NUMBER: 2004:293057 SCISEARCH

THE GENUINE ARTICLE: 804NI

TITLE: Molecular insights for how preferred oxoanions bind to and
stabilize **transition-metal**
nanoclusters: a tridentate, C-3 symmetry, lattice
size-matching binding model

AUTHOR: Finke R G (Reprint); Ozkar S

CORPORATE SOURCE: Colorado State Univ, Dept Chem, Ft Collins, CO 80523 USA
(Reprint); Middle E Tech Univ, Dept Chem, TR-06531 Ankara,
Turkey

COUNTRY OF AUTHOR: USA; Turkey

SOURCE: COORDINATION CHEMISTRY REVIEWS, (JAN 2004) Vol. 248, No.
1-2, pp. 135-146.

Publisher: ELSEVIER SCIENCE SA, PO BOX 564, 1001 LAUSANNE,
SWITZERLAND.

ISSN: 0010-8545.

DOCUMENT TYPE: General Review; Journal

LANGUAGE: English

REFERENCE COUNT: 78

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The recent discovery of an anion efficacy series for the formation and stabilization of **transition-metal** Ir(0)(n) nanoclusters, specifically P2W15Nb3O629- similar to SiW9Nb3O407- > C6H5O73- > [-CH2CH(CO2-)](n)(n-) similar to OAc- similar to P3O93- similar to Cl- similar to OH--that is, polyoxoanions > citrate(3-) > other commonly employed nanocluster stabilizing anions, raises the question of what are the underlying factors behind this preferred order of stabilizers? A brief discussion of three relevant nanocluster papers in the literature, plus a concise summary of the relevant interfacial electrochemistry and surface science literature of C-3 symmetry SO42- binding to Ir(111) (as well as to Rh(111), Pt(111), Au(111) and Cu(111)), are presented first as key background for the lattice size-matching model which follows in which tridentate anions coordinate to **transition-metal** nanocluster surfaces. A table of nanocluster formation and stabilization data for tridentate oxoanion stabilizers is presented, results which allow two fundamental, previously unavailable, important insights (out of 10 total insights): (i) the premier anionic stabilizers of **transition-metal**(0) nanoclusters present a tridentate, facial **array** of oxygen atoms for **coordination** to the metal(0) surface; and (ii) the preferred tridentate oxoanion stabilizers of nanoclusters are those that have the best match between the ligand O-O and surface Ir-Ir distances, all other factors being equal-that is, there is a previously unappreciated, geometric, anion-to-surface-metal lattice-size-matching component to the best anionic stabilizers of **transition-metal** nanoclusters. These are the first molecular-level insights for how the to-date premier tridentate, anionic stabilizers of **transition-metal** nanoclusters achieve their higher level of stabilization-a non-trivial advance since there was a lack previously of molecular-level insights into how **transition-metal** nanoclusters are stabilized. Four experimentally testable predictions of the C-3 symmetry, lattice size-matching model for nanocluster M(111) surfaces are presented and briefly discussed. One key prediction is that HPO42- is a heretofore unappreciated simple, effective and readily available stabilizer of Ir(0) and other **transition-metal** nanoclusters where there is a lattice-size match between the O-O and the surface M-M distances. Recent experimental evidence is summarized revealing that this prediction is, in fact, trite-that is, the third key, new finding of this work is (iii) the first rational design of a new nanocluster stabilizer, HPO42-, one shown to be as good a stabilizer as the common nanocluster stabilizer citrate(3-). The C-3 symmetry, lattice size-matching model is significant in seven additional ways which are detailed in the text and summary which follows. (C) 2003 Elsevier B.V. All rights reserved.

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(FILE 'HOME' ENTERED AT 09:59:33 ON 01 JUL 2005)

FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS, LIFESCI' ENTERED AT 10:00:00 ON 01 JUL 2005

L1 1033750 S ELECTRODE?
L2 442634 S ARRAY?
L3 23852 S L1 AND L2
L4 4941 S SOLVENT (2W)ACCESSIBLE
L5 3 S L3 AND L4
L6 1 DUP REM L5 (2 DUPLICATES REMOVED)
L7 248883 S TRANSITION (W)METAL?
L8 101 S L3 AND L7
L9 88 DUP REM L8 (13 DUPLICATES REMOVED)
L10 1129452 S LIGAND?

L11 11 S L9 AND L10
L12 2 S L9 AND COORDINATION

=> s detect? or analyte?

L13 5700021 DETECT? OR ANALYTE?

=> s 19 and l13

L14 19 L9 AND L13

=> dup rem l14

PROCESSING COMPLETED FOR L14

L15 19 DUP REM L14 (0 DUPLICATES REMOVED)

=> d 1-19 ibib ab

L15 ANSWER 1 OF 19 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN

ACCESSION NUMBER: 2005-07135 BIOTECHDS

TITLE: **Detecting** nucleic acid hybridization of a nucleic acid probe and a target nucleic acid, for clinical diagnostics, by contacting nucleic acid probe and a redox pair of **transition metal** complexes and measuring electron catalytic signal;
a DNA **array** comprising an immobilized DNA probe for the **detection** of nucleic acid hybridization for infection diagnosis application

AUTHOR: KELLEY S O; LAPIERRE M; OKEEFE M

PATENT ASSIGNEE: BOSTON COLLEGE

PATENT INFO: WO 2005005952 20 Jan 2005

APPLICATION INFO: WO 2004-US14788 11 May 2004

PRIORITY INFO: US 2003-470242 13 May 2003; US 2003-470242 13 May 2003

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: WPI: 2005-122463 [13]

AB DERWENT ABSTRACT:

NOVELTY - **Detecting** nucleic acid hybridization between a nucleic acid probe and a target nucleic acid or **detecting** a mismatch between a first nucleic acid and second nucleic acid in a sample comprises contacting a solid support having immobilized nucleic acid probe to the sample and a redox pair comprising **transition metal** complexes and measuring electron catalytic signal.

DETAILED DESCRIPTION - **Detecting** nucleic acid hybridization between a nucleic acid probe and a target nucleic acid or **detecting** a mismatch between a first nucleic acid and second nucleic acid in a sample comprises providing a nucleic acid probe immobilized on a solid support, contacting under hybridization conditions the solid support and the immobilized nucleic acid probe to the sample, and a redox pair comprising a first **transition metal** complex and a second **transition metal** complex, and measuring electron catalytic signal generated by hybridization of the nucleic acid probe and the target nucleic acid in the sample, where an increase of the signal **detected** relative to a signal of a control sample comprising no target nucleic acid, indicates that the nucleic acid hybridization has occurred.

WIDER DISCLOSURE - Disclosed is a kit for carrying out the method above, including a nucleic acid probe immobilized on a conducting **electrode**, and redox reagents.

BIOTECHNOLOGY - Preferred Method: In **detecting** nucleic acid hybridization between a nucleic acid probe and a target nucleic acid in a sample, the first **transition metal** complex comprises a metal selected from cobalt, iron, molybdenum, osmium, ruthenium and rhenium, and where the second **transition metal** complex comprises a metal selected from iron, cobalt, molybdenum, osmium and rhenium. The first **transition**

metal complex is a **transition metal** ammonium complex, and where the second **transition metal** complex is a **transition metal** cyanate complex. The method further comprises an additional step of contacting under hybridization conditions the solid support and the immobilized nucleic acid probe to a solution containing no sample, and a redox pair comprising a first **transition metal** complex and a second **transition metal** complex. The solid support comprises a gold **electrode**. **Detecting** nucleic acid hybridization between a first nucleic acid and a second nucleic acid comprises: (a) providing the first nucleic acid immobilized on a solid support; (b) contacting under hybridization conditions the solid support and the immobilized first nucleic acid to a solution suspected of containing the second nucleic acid, and a redox pair comprising a first **transition metal** complex and a second **transition metal** complex; and (c) measuring an electron catalytic signal generated by hybridization of the first nucleic acid and the second nucleic acid, where an increase of the signal **detected** in step (c) relative to a signal of a control sample comprising no second nucleic acid, indicates that the nucleic acid hybridization has occurred. **Detecting** a mismatch between a first nucleic acid and second nucleic acid comprises: (a) providing a nucleic acid probe immobilized on a solid support; (b) contacting under hybridization conditions the solid support and the immobilized nucleic acid probe to a solution containing the second nucleic acid, and a redox pair comprising a first **transition metal** complex and a second **transition metal** complex; and (c) measuring a electron catalytic signal generated by hybridization of the nucleic acid probe and the second nucleic acid, where a decrease of the signal **detected** in step (c) relative to a signal of a perfect complementarity between the nucleic acid probe and the second nucleic acid, indicates that there is a mismatch between the first nucleic acid and the second nucleic acid. **Detecting** a mismatch between a first nucleic acid and second nucleic acid may comprise: (a) providing the first nucleic acid immobilized on a solid support; (b) contacting under hybridization conditions the solid support and the immobilized first nucleic acid to a solution containing the second nucleic acid, and a redox pair comprising a first **transition metal** complex and a second **transition metal** complex; and (c) measuring a electron catalytic signal generated by hybridization of the first nucleic acid and the second nucleic acid, where a decrease of the signal **detected** in step (c) relative to a signal of a perfect complementarity between the first nucleic acid and the second nucleic acid, indicates that there is a mismatch between the first nucleic acid and the second nucleic acid.

USE - The method is useful for **detecting** hybridization between two nucleic acid molecules. It is useful for **detecting** infectious bacterial and viral agents, for **detecting** genes and proteins, e.g., changes in genes and proteins, e.g., changes in oncogenes, for clinical diagnostic setting, and for **detecting** pathogenic agents in non-clinical settings e.g., **detection** of bioterror agents.

EXAMPLE - No relevant example given. (63 pages)

L15 ANSWER 2 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:98641 HCAPLUS

DOCUMENT NUMBER: 142:193892

TITLE: Protein and peptide sensors using electrical **detection** methods

INVENTOR(S): Sawyer, Jaymie Robin; Li, Changming; Choong, Vi-en; Maracas, George; Zhang, Peiming

PATENT ASSIGNEE(S): USA

SOURCE: U.S. Pat. Appl. Publ., 22 pp., Cont.-in-part of U.S. Ser. No. 506,178.

CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005023155	A1	20050203	US 2003-203874	20030609
US 6824669	B1	20041130	US 2000-506178	20000217
WO 2001061053	A2	20010823	WO 2001-US5476	20010220
WO 2001061053	A3	20020314		
WO 2001061053	C2	20021017		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2000-506178 A2 20000217
WO 2001-US5476 W 20010220

AB The present invention provides an apparatus and methods for the elec. **detection** of mol. interactions between a probe mol. and a protein or peptide target mol., but without requiring the use of electrochem. or other reporters to obtain measurable signals. The methods can be used for elec. **detection** of mol. interactions between probe mols. bound to defined regions of an **array** and protein or peptide target mols. which are permitted to interact with the probe mols. Streptavidin-modified porous hydrogel microelectrodes were prepared Biotinylated antibodies to Escherichia coli were attached to the streptavidin-modified microelectrodes to make an immunosensor.

L15 ANSWER 3 OF 19 MEDLINE on STN
ACCESSION NUMBER: 2005043032 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15672176
TITLE: Photoactive metallocyclodextrins: sophisticated supramolecular **arrays** for the construction of light activated miniature devices..
AUTHOR: Haider Johanna M; Pikramenou Zoe
CORPORATE SOURCE: School of Chemistry, The University of Birmingham, Edgbaston B15 2TT, UK.
SOURCE: Chemical Society reviews, (2005 Feb) 34 (2) 120-32. Electronic Publication: 2005-01-25. Ref: 38 Journal code: 0335405. ISSN: 0306-0012.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) General Review; (REVIEW) (REVIEW, TUTORIAL)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200503
ENTRY DATE: Entered STN: 20050127 Last Updated on STN: 20050324 Entered Medline: 20050323

AB The introduction of photoactive metal centres onto cyclodextrin receptors opens up new possibilities for the design of sensors, wires and energy conversion systems. This tutorial review focuses on strategies involving such metallocyclodextrins for the construction of supramolecular **arrays** with light-activated functions. The assembly procedures for building such **arrays** are presented, together with the

features required for their functions both as sensors for ion or small molecule **detection** and as wires for photoinduced long-range energy or electron transport. Systems for metal ion sensing are described where the cyclodextrin plays a mediating role in influencing the luminescence properties of an organic probe, responsive to metal binding. Small molecule sensing by the cyclodextrin cavity is realised using luminescent lanthanide or **transition metal** functionalised cyclodextrins. The light signal of the photoactive metal is switched on or off upon binding an **analyte** in the cyclodextrin cavity. The metallocyclodextrin systems that function as wires are distinguished by the controlled assembly of **transition metal** polypyridine and metalloporphyrin units. These units have inherent photoactivity that defines the vectorial direction of energy or electron transfer processes through the wire.

L15 ANSWER 4 OF 19 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN
ACCESSION NUMBER: 2004-25929 BIOTECHDS

TITLE: **Detecting** nucleic acid sequence in sample,
comprises hybridizing sample with primer oligonucleotide,
elongating oligonucleotide, contacting solution of cationic
electron donor to elongated oligonucleotide and
detecting target;
DNA sequence **detection** and oligonucleotide
elongation using DNA primer and DNA probe

AUTHOR: THORP H H; GORE M
PATENT ASSIGNEE: UNIV NORTH CAROLINA
PATENT INFO: WO 2004092708 28 Oct 2004
APPLICATION INFO: WO 2004-US6846 5 Mar 2004
PRIORITY INFO: US 2003-508327 2 Oct 2003; US 2003-452879 7 Mar 2003
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2004-784632 [77]

AB DERWENT ABSTRACT:

NOVELTY - **Detecting** the presence of a target sequence in a sample, involves hybridizing the sample with primer oligonucleotide on a first **electrode** to form a hybridized nucleic acid, elongating the primer oligonucleotide using an enzyme, contacting a solution comprising a cationic electron donor and an anionic metal complex, to the elongated oligonucleotide, and **detecting** the presence of the target nucleic acid from the **detected** electron transfer.

DETAILED DESCRIPTION - **Detecting** (M1) the presence of a target sequence in a sample, involves providing a solid support comprising a first **electrode** having a first primer oligonucleotide immobilized on to it, hybridizing the sample with the primer oligonucleotide to form a hybridized nucleic acid, elongating the primer oligonucleotide using an enzyme to form an elongated oligonucleotide, contacting a solution comprising a cationic electron donor of the formula comprising a **transition metal** ion and an anionic metal complex, to the elongated oligonucleotide under conditions in which the electron donor binds to the elongated oligonucleotide, transfers electrons to the **electrode**, and accepts electrons from the anionic metal complex, and **detecting** the presence of the target nucleic acid from the **detected** electron transfer.

WIDER DISCLOSURE - The following are disclosed: (1) **electrodes** such as gold **electrode** having oligonucleotide probe immobilized on to it; and (2) substrate such as non-conducting or semiconductor substrate having several separate and distinct oligonucleotides or probes.

BIOTECHNOLOGY - Preferred Method: In (M1), the first **electrode** is a gold **electrode**. The hybridizing step involves hybridizing the first and second target sequence to the first and second primer oligonucleotide to form a first and second assay

complex. The elongation step involves elongating the first and second primer oligonucleotide in a reaction mixture with an enzyme and several preselected first and second **detectable** nucleotides to produce a first and second elongated oligonucleotide. (M1) further involves reacting the first and second elongated oligonucleotide with the first and second **transition metal** complex that oxidizes the **detectable** nucleotide in a first and second oxidation-reduction reaction, regenerating the reduced form of the first and second **transition metal** complex in a catalytic condition, and **detecting** the presence of the first and second target sequence by **detecting** the first and second oxidation-reduction reaction. The first preselected second **detectable** nucleotide is the same as the preselected second **detectable** nucleotide. The enzyme is a polymerase and reaction mixture comprises a set of at least four different dNTPs resulting in a rolling circle concatamer, where the reaction mixture further comprises a label probe that comprises the preselected **detectable** nucleotide. The one of four dNTPs is a preselected **detectable** nucleotide, such that the elongated oligonucleotide comprises the **detectable** nucleotides. The enzyme is a ligase and several preselected **detectable** nucleotides are contained within a ligation probe, where if the ligation probe hybridizes adjacently to the primer oligonucleotide on the target sequence, ligation occurs and a ligation product is formed that comprises the **detectable** nucleotides. The target molecule is a circular probe. The reaction mixture further comprises a label probe that will bind to an elongated portion of the elongated oligonucleotide, and the method further involves removing the target such that label probe hybridizes to the elongation oligonucleotide. The target sequence comprises a **detection** position, and the primer oligonucleotide or the ligation probe comprises an interrogation base at the non-immobilized terminus or the ligation site, where the elongation occurs only if the interrogation base is complementary to the **detection** base in the assay complex, and the ligation occurs only if the interrogation base is complementary to the **detection** base in the assay complex. The **detectable** nucleotide is chosen from 8-oxo-guanine and 5-aminouridine. The **transition metal** complex is osmium²⁺ (2,2'-bipyridine)₃. The **electrode** further comprises a self-assembled monolayer (SAM). The SAM comprises insulators comprising alkyl chains. (M1) further involves removing the target sequence after elongation, and adding a label probe that will bind to an elongated portion of the elongated oligonucleotide prior to the contacting step. The anionic metal complex comprises Fe(CN)₆³⁻ and a bipyridyl sulfonate metal complex. The cationic metal complex has the formula M(NH₃)₆³⁺, where M = ruthenium or cobalt, preferably ruthenium

USE - (M1) is useful for **detecting** the presence of a target sequence such as target nucleic acid comprising DNA in a sample (claimed). (M1) is useful for identifying nucleotides at a **detection** position within the target sequence, and in **array** formats. (M1) is useful for generating elongated nucleic acids.

ADVANTAGE - (M1) can be carried out with a microelectronic device. (M1) enables to generate elongated nucleic acids that essentially create more nucleic acids such that more cationic **transition metal** complexes can associate thus increasing the signal.

EXAMPLE - Gold macroelectrodes were prepared by evaporation of a 200Angstrom chromium adhesion layer followed by a 2000Angstrom gold layer (both 99.99% purity) onto clean 1x1 cm glass squares. Before each experiment **electrodes** were cleaned by immersion in warm piranha solution (70% concentrated sulfuric acid, 30% hydrogen peroxide solution (30%)) for 15 minutes followed by 5% aqueous hydrofluoric acid for 30 seconds. The **electrodes** were then rinsed thoroughly with deionized water and immersed in the DNA deposition solution while still

wet. DNA self-assembled monolayer's (SAM's) were prepared using the procedure used by the Tarlov group. The clean gold macro-or-micro-**electrode** was immersed in a 1.0 μm solution of probe oligonucleotide in D-BFR for 2 hours, rinsing with R-BFR for 5 seconds, immersing in a 1.0 mM 6-mercapto-1-hexanol solution (MCH) solution in deionized water for 1 hour, and rinsing for 5 second with R-BFR. Hybridization was performed at 35degreesC for 60 minutes in H-BFR. The concentration of complementary target and noncomplementary target for nonspecific adsorption controls was 0.1 μm . After removal from the hybridization solution, **electrodes** were rinsed with R-BFR for 5 seconds. 5-NH₂-dUridine was phosphorylated. The identity and purity of the triphosphate product was confirmed by 32P NMR in D₂O, thin-layer chromatography. The target oligonucleotide was synthesized using a Klenow (exo-) primer extension procedure. The observation of eletrocatalytic current from target oligonucleotides containing 5-amino-uracil and 8-oxo-guanine was first investigated at 1x1 cm gold wafer **electrodes**. The averages of the peak current responses of five different films of each type were collected illustrating that the **detection** of the catalytic current for the modified-base containing films was both consistent and reproducible. The same procedure was carried out with gold macroelectrodes. The probe and target surface densities calculated for the gold macroelectrodes and gold wire microelectrodes. All of the values were within the range (approximately 1-10x10¹² molecules/cm²) that the Tarlov group observed, and below the maximum value imposed by the physical dimensions of the DNA double helix itself. Although there was some variance between the values obtained for the macro-vs microelectrodes, and between the values obtained using the two different methods, within errors the differences were actually relatively small, and more importantly, the hybridization efficiencies were similar for the macroelectrodes (34.5% vs. 46.6%) and nearly identical for the microelectrodes (64.5% and 69%). (70 pages)

L15 ANSWER 5 OF 19 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STM
 ACCESSION NUMBER: 2004-07376 BIOTECHDS

TITLE: A composition for using electron transfer moieties with different redox potentials to electronically **detect** nucleic acids, particularly for the electrochemical sequencing of DNA;
 electron transfer moiety and DNA primer and DNA probe for use in DNA sequencing

AUTHOR: YU C; TOR Y
 PATENT ASSIGNEE: YU C; TOR Y
 PATENT INFO: US 2003232354 18 Dec 2003
 APPLICATION INFO: US 2003-336225 2 Jan 2003
 PRIORITY INFO: US 2003-336225 2 Jan 2003; US 2000-626096 26 Jul 2000
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 OTHER SOURCE: WPI: 2004-061273 [06]

AB DERWENT ABSTRACT:

NOVELTY - A composition comprises: (a) a first nucleic acid comprising a first ETM with a first redox potential; (b) a second nucleic acid comprising a second ETM with a second redox potential; (c) a third nucleic acid comprising a third ETM with a third redox potential; and (d) a fourth nucleic acid comprising a fourth ETM with a fourth redox potential, where the first, second, third and fourth redox potentials are different.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following: (1) methods of determining the identification of a nucleotide at a **detection** position in a target sequence, where the target sequence comprises a first target domain directly 5' adjacent to the **detection** position; (2) a method of sequencing a target nucleic acid; and (3) methods of making a plurality of sequencing probes or nucleic acids, each with a covalently attached ETM with a different redox

potential.

BIOTECHNOLOGY - Preferred Composition: The sequences of the first, second, third and fourth nucleic acids in the composition are different. The sequences of the nucleic acids differ by only one base. The nucleoside comprising the different base comprises the ETM. The nucleic acids are single-stranded. At least one of the ETMs is a **transition metal** complex, such as ferrocene. Additionally, at least one of the **transition metal** complexes is a ruthenium complex. All of the ETMs are ferrocene derivatives or ruthenium derivatives. Preferred Method: Determining the identification of a nucleotide at a **detection** position in a target sequence, comprises: (a) providing a first hybridization complex comprising the target sequence and an extension primer hybridized to the first target domain of the target sequence; (b) contacting the hybridization complex with a polymerase enzyme and a composition comprising a plurality of chain terminating NTPs each comprising a covalently attached ETM, each NTP comprising an ETM with a different redox potential, under conditions where if one of the NTPs base pairs with the base at the **detection** position, the extension primer is extended by the enzyme to incorporate the ETM and form an extended primer; and (c) identifying the base at the **detection** position. The identification step comprises contacting the extended primer with a solid support comprising an **array of electrodes** comprising capture probes to form second hybridization complexes; applying an input signal to the **electrodes**; and **detecting** an output signal characteristic of the ETM. The extension primer is attached to an **electrode** on a solid support. Alternatively, the identification step comprises applying an input signal to the **electrodes**, and **detecting** an output signal characteristic of the ETM. Determining the identification of a nucleotide at a **detection** position in a target sequence comprises: (a) providing a solid support comprising an **array of electrodes** each comprising a capture probe; (b) contacting the **array** with a plurality of **detection** probes each comprising a unique nucleotide at the interrogation position, and an ETM with a unique redox potential; and (c) **detecting** a signal from at least one of the ETMs to identify the nucleotide at the **detection** position. Sequencing a target nucleic acid comprises: (a) providing a plurality of sequencing probes complementary to the target sequence, each of a different length, each comprising a different chain terminating NTP comprising an ETM comprising a different redox potential; (b) separating the nucleic acids on the basis of size; and (c) **detecting** each of the ETMs to identify the sequence of at least a portion of the target nucleic acid. Making a plurality of sequencing probes comprises: (a) providing a first oligonucleotide substituted with a first 5' protected deoxynucleotide; (b) providing a first ETM derivative with a first redox potential; (c) mixing the first oligonucleotide with the first ETM derivative to form a first sequencing probe with a first deoxynucleotide triphosphate comprising a first ETM with a first redox potential; (d) providing a second oligonucleotide substituted with a second 5' protected deoxynucleotide; (e) providing a second ETM derivative with a second redox potential; and (f) mixing the second oligonucleotide with the second ETM derivative to form a second sequencing probe with a second deoxynucleotide triphosphate comprising the second ETM with a second redox potential. The method further comprises: (a) providing a third oligonucleotide substituted with a third 5' protected deoxynucleotide; (b) providing a third ETM derivative with a third redox potential; and (c) mixing the third oligonucleotide with the third ETM derivative to form a third sequencing probe with a third deoxynucleotide triphosphate comprising a third ETM with a third redox potential. In addition, the method comprises: (a) providing a fourth oligonucleotide substituted with a fourth 5' protected deoxynucleotide; (b) providing a fourth ETM derivative with a fourth redox potential; and

(c) mixing the fourth oligonucleotide with the fourth ETM derivative to form a fourth sequencing probe with a fourth deoxynucleotide triphosphate comprising a fourth ETM with a fourth redox potential. The **detecting** comprises passing the sequencing probes over four sequential **electrodes** comprising different potentials.

Alternatively, the **detecting** comprises passing the sequencing probes over a single **electrode**. Making a plurality of nucleic acids comprises: (a) providing a first transitional metal complex with a first redox potential and a first functional group; (b) providing a first oligonucleotide substituted with a second functional group; (c) mixing the first transitional metal complex with the first oligonucleotide to form a first transitional metal complex-oligonucleotide conjugate with a first redox potential; (d) providing a second transitional metal complex with a second redox potential and a first functional group; (e) providing a second oligonucleotide substituted with a second functional group; and (f) mixing the second transitional metal complex with the second oligonucleotide to form a second transitional metal complex-oligonucleotide conjugate with a second redox potential.

USE - The composition and methods are useful in electronically **detecting** nucleic acids, particularly for the electrochemical sequencing of DNA. (79 pages)

L15 ANSWER 6 OF 19 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STM
ACCESSION NUMBER: 2003-25799 BIOTECHDS

TITLE: New compositions having electronic transfer groups with different redox potentials, useful for electronically **detecting** nucleic acids, **detecting** target cancer gene sequences, and for viral or bacterial **detection**;

electronic transfer group composition for use in DNA **detection** and disease diagnosis

AUTHOR: BLACKBURN G; KAYYEM J F; TAO C; YU C

PATENT ASSIGNEE: BLACKBURN G; KAYYEM J F; TAO C; YU C

PATENT INFO: US 2003143556 31 Jul 2003

APPLICATION INFO: US 2002-137710 30 Apr 2002

PRIORITY INFO: US 2002-137710 30 Apr 2002; US 2001-281276 3 Apr 2001

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: WPI: 2003-730803 [69]

AB DERWENT ABSTRACT:

NOVELTY - A composition (I) comprising a first, second, third and fourth nucleic acid comprising a first, second, third and fourth electron transfer groups (ETM) with a first, second, third and fourth redox potential, respectively, (where each of the redox potentials are different), is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for: (1) determining the identification of a nucleotide at a **detection** position in a target sequence (the target sequence comprises a first target domain directly 5' adjacent to the **detection** position), comprising: (a) providing a first hybridization complex having the target sequence and an extension primer hybridizes to the first target domain of the target sequence; (b) contacting the hybridization complex with a polymerase enzyme and a composition comprising a number of chain terminating NTPs each comprising a covalently attached ETM, each comprising an ETM with a different redox potential, under conditions whereby if one of the NTPs base pairs with the base at the **detection** position, the extension primer is extended by the enzyme to incorporate the ETM and form an extended primer; and (c) identifying the base at the **detection** position; (2) determining the identification of a nucleotide at a **detection** position in a target sequence (the target sequence comprises a first target domain directly 5' adjacent to the **detection** position), comprising: (a) comprising providing a solid support having an array of

electrodes each comprising a capture probe; (b) contacting the **array** with a number of **detection** probes each comprising a unique nucleotide at the interrogation position and an ETM with a unique redox potential; and (c) **detecting** a signal from at least one of the ETMs to identify the nucleotide at the **detection** position; (3) sequencing a target nucleic acid, comprising: (a) providing a number of sequencing complementary to the target sequence, each of a different length, each comprising a different chain terminating NTP having an ETM with a different redox potential; (b) separating the nucleic acids on the basis of size; (c) and **detecting** each of the ETMs to identify the sequence of at least a portion of the target nucleic acid; (4) making a number of sequencing probes, each with a covalently attached ETM with a different redox potential, comprising: (a) providing a first oligonucleotide substituted with a first 5' protected deoxynucleotide; (b) providing a first ETM derivative with a first redox potential; (c) mixing the first oligonucleotide with the first ETM derivative to form a first sequencing probe with a first deoxynucleotide triphosphates comprising a first ETM with a first redox potential; (d) providing a second oligonucleotide substituted with a second 5' protected deoxynucleotide; (e) providing a second ETM derivative with a second redox potential; and (f) mixing the second oligonucleotide with the second ETM derivative to form a second sequencing probe with a second deoxynucleotide triphosphates comprising a second ETM with a second redox potential; (5) a composition for use in any of the methods cited above, where at least one of the ETMs is a **transition metal** complex; and (6) making a number of nucleic acids, each with a covalently attached ETM with a different redox potential, comprising: (a) providing a first transitional metal complex with a first redox potential and a first functional group; (b) providing a first oligonucleotide substituted with a second functional group; (c) mixing the first **transition metal** complex with the first oligonucleotide to form a first **transition metal** complex-oligonucleotide conjugate with a first redox potential; (d) providing a second transitional metal complex with a second redox potential and a first functional group; (e) providing a second oligonucleotide substituted with a second functional group; and (f) mixing the second **transition metal** complex with the second oligonucleotide to form a second **transition metal** complex-oligonucleotide conjugate with a second redox potential.

WIDER DISCLOSURE - Nucleic acids, primers and probes used in the methods, are also disclosed.

BIOTECHNOLOGY - Preferred Composition: The sequences of the first, second, third and fourth nucleic acids are different, or differ by only one base. The nucleoside comprises the different base having the ETM. The nucleic acids are single stranded. At least one of the ETMs is a **transition metal** complex that is ferrocene or a ruthenium complex. The ETMs are also ferrocene or ruthenium derivatives. Preferred Method: The identification step in the method of (1) comprises: (a) contacting the extended primer with a solid support having an **array** of **electrodes** with capture probes to form second hybridization complexes; (b) applying an input signal to the **electrodes**; (c) **detecting** an output signal characteristic of the ETM; and (d) (optionally) **detecting** an output signal characteristic of the ETM. The extension primer is attached to an **electrode** on a solid support. Making a number of sequencing probes further comprises: (a) providing a third oligonucleotide substituted with a third 5' protected deoxynucleotide; (b) providing a third ETM derivative with a third redox potential; and (c) mixing the third oligonucleotide with the ETM derivative to form a third sequencing probe with a third deoxynucleotide triphosphates comprising a third ETM with a third redox potential. The method additionally comprises: (a) providing a fourth oligonucleotide substituted with a fourth 5' protected deoxynucleotide; (b) providing a

fourth ETM derivative with a fourth redox potential; and (c) mixing the fourth oligonucleotide with the fourth ETM derivative to form a fourth sequencing probe with a fourth deoxynucleotide triphosphates comprising a fourth ETM with a fourth redox potential. The first, second, third and fourth deoxynucleotide triphosphates in any of the methods are different.

USE - The methods and compositions of the present invention are useful for electronically **detecting** nucleic acids, in particular the electrochemical sequencing of DNA. The probes can also be used to **detect** target sequences such as the gene for non-polyposis colon cancer, the BRCA1 breast cancer gene, the Apo E4 gene of Alzheimer's disease, for viral and bacterial **detection**, and for forensic DNA fingerprinting.

EXAMPLE - C96 Was added to a solution of CT169 in dichloromethane. The mixture was cooled to 0 degreesC and N,N,N'N'-tetraisopropylamino, 2-cyanoethoxy phosphane was added. The reaction mixture was warmed up to room temperature and stirred for 2 hours at room temperature. The mixture was diluted in 60 mL of dichloromethane, extracted by waster three times, dried over sodium sulfate and concentrated. The crude product was purified on a silica gel column packed with 1% TEA in hexane, and eluted with 1% TEA and 5-15% ethyl acetate in hexane to yield the desired product CT170 as a yellow sticky oil. The product was dissolved in acetonitrile, and was filtered through a 0.25 micrometer filter, and then was concentrated. (83 pages)

L15 ANSWER 7 OF 19 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN

ACCESSION NUMBER: 2004-11258 BIOTECHDS

TITLE: Device and method for **detecting** nucleic acid hybridization;
DNA probe immobilization on support for DNA chip construction

AUTHOR: LEE J G; LEE S E; PARK J G; YOON G S

PATENT ASSIGNEE: LG ELECTRONICS INC

PATENT INFO: KR 2003074895 22 Sep 2003

APPLICATION INFO: KR 2002-13891 14 Mar 2002

PRIORITY INFO: KR 2002-13891 14 Mar 2002; KR 2002-13891 14 Mar 2002

DOCUMENT TYPE: Patent

LANGUAGE: Korean

OTHER SOURCE: WPI: 2004-164241 [16]

AB DERWENT ABSTRACT:

NOVELTY - A device and method for **detecting** nucleic acid hybridization are provided, thereby cheaply and accurately **detecting** the nucleic acid hybridization without producing noise and scattering.

DETAILED DESCRIPTION - A device for **detecting** a nucleic acid hybridization comprises a nucleic acid chip containing a probe fixed multi-array electrode, an electrode board with an electrode-connecting portion(5), multiple convex lens(8), and a cover containing a solution inlet end and a solution outlet end; an electricity supplying device connected to the electrode-connecting portion of the nucleic acid chip; a storage vessel containing a fine pump(22) connected to the solution inlet end of the cover, a buffer solution-storing vessel(18) connected to the pump, a transition metal chelate-storing vessel(19), a target nucleic acid-storing vessel(20) and an intercalate-storing vessel(21); and optical fibers(25) effectively transferring light from the multiple convex lens and a light **detecting** device(24). (1 pages)

L15 ANSWER 8 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:969317 HCAPLUS

DOCUMENT NUMBER: 140:24087

TITLE: Use of immobilized, uncharged analogs of oligonucleotide probes for the electrochemical **detection** of hybridization

INVENTOR(S): Hartwich, Gerhard; Schuhmann, Wolfgang; Frischmann, Peter; Wieder, Herbert
 PATENT ASSIGNEE(S): FRIZ Biochem GmbH, Germany
 SOURCE: Ger. Offen., 20 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10221004	A1	20031211	DE 2002-10221004	20020511
PRIORITY APPLN. INFO.:			DE 2002-10221004	20020511

AB A method for **detection** of nucleic acid hybridization using immobilized **arrays** of probes is described. The method uses nucleic acid analogs, such as peptide nucleic acids, as the probes immobilized on an **electrode** surface and hybridization is **detected** using a redox reaction that creates an elec. signal that can be **detected** by any of a number of sensitive methods.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L15 ANSWER 9 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:793411 HCAPLUS

DOCUMENT NUMBER: 139:287272

TITLE: Electrochemical **detection** of nucleic acid hybridization using probe **arrays** immobilized on **electrodes**

INVENTOR(S): Hartwich, Gerhard
 PATENT ASSIGNEE(S): Friz Biochem GmbH, Germany
 SOURCE: Ger. Offen., 8 pp.
 CODEN: GWXXBX

DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10212958	A1	20031009	DE 2002-10212958	20020322
PRIORITY APPLN. INFO.:			DE 2002-10212958	20020322

AB A procedure for the electrochem. **detection** of nucleic acid hybridization using microarrays immobilized on **electrode** surfaces is described. An **electrode**, such as a gold-coated mica, is used as the surface on which a microarray is immobilized. The **array** is then hybridized with an excess of sample nucleic acids and hybridization is **detected** by measuring changes in redox potential using an indicator such as a redox dye or a **transition metal salt**.

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L15 ANSWER 10 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:634112 HCAPLUS

TITLE: Bio-inspired sensor based on bioinorganic model complexes and **array** of carbon nanotube **electrodes**

AUTHOR(S): Roy, Sudeshna; Jessica, Koehne; Mascharak, Pradip K.; Nguyen, Cattien V.; Meyyappan, M.
 CORPORATE SOURCE: Center for Nanotechnology, ELORET Corp./NASA Ames Research Center, Moffett Field, CA, 94035, USA
 SOURCE: Abstracts of Papers, 226th ACS National Meeting, New

York, NY, United States, September 7-11, 2003 (2003),
INOR-254.. American Chemical Society: Washington, D.
C.

CODEN: 69EKY9

DOCUMENT TYPE: Conference; Meeting Abstract

LANGUAGE: English

AB The last few decades have seen tremendous progress in the synthesis of functional and structural models of inorg. complexes relating to biol. Numerous models of active sites of metallo-enzymes and metallo-drugs have been successfully synthesized. In this paper we extend bioinorg. chemical with nanotechnol. by chemical coupling of the bio-inspired **transition-metal** model complexes to carbon nanotube based **electrodes**. The ultimate goal here is to create a functional model of metallo-enzymes that have elec. addressable metal active sites. In preliminary studies, we have used Co based complexes with varying ligand compns. for this purpose, as Co is both redox-active and known to bind/activate oxygen, in similar manner to oxygenase family of enzymes. The complexes are tethered to an **array** of chemical functionalized oxidatively opened carbon nanotubes. Carbon nanotube based **electrodes** are robust, have well-defined geometry and can be fabricated in high yield. These properties have also encouraged us to probe the use of functionalized carbon nanotubes as electrochem. sensors for small mols. like H₂O, O₂, ROOR and NO. This part of the study therefore represents a novel and versatile route to sensitive **detection** of trace amts. of these mols. and shows great promise for expansion to include various other chemical and biochem. moieties.

L15 ANSWER 11 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:713849 HCAPLUS

DOCUMENT NUMBER: 140:7048

TITLE: Optical measurements of platinum based electrocatalysts for the electrooxidation of methanol
AUTHOR(S): Gruber, K.; Kronberger, H.; Faflek, G.; Nauer, G.; Besenhard, J.-O.

CORPORATE SOURCE: ECHEM Centre of Competence in Applied Electrochemistry, Wiener Neustadt, Austria

SOURCE: Fuel Cells (Weinheim, Germany) (2003), 3(1-2), 3-7
CODEN: FUCEFK; ISSN: 1615-6846

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

AB In a combinatorial electrochem. experiment quinine sulfate was used as a pH sensitive fluorescing indicator to **detect** the catalytic activity of methanol oxidation catalysts. During electrochem. expts. the surface of the **electrode array** was monitored with a CCD camera. The dependence of the intensity of the fluorescence on the applied potential was used as an anal. tool; to study the electrochem. performance of Pt based electrocatalysts, for the electrooxidn. of methanol, in both short and long term tests.

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L15 ANSWER 12 OF 19 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN

ACCESSION NUMBER: 2002-16165 BIOTECHDS

TITLE: **Detecting** target nucleic acid in a sample, by constructing dendritic architecture of double-stranded nucleic acid crosslinked semiconductor-nanoparticle **arrays** on solid supports and controlled photocurrent generation;
DNA or RNA **detection** in a sample using DNA **array**, DNA probe and DNA chip for genetic disease diagnosis

AUTHOR: WILLNER I

PATENT ASSIGNEE: YISSUM RES DEV CO HEBREW UNIV JERUSALEM; PATOLSKY F
PATENT INFO: WO 2002031191 18 Apr 2002
APPLICATION INFO: WO 2000-IL886 12 Oct 2000
PRIORITY INFO: IL 2000-138988 12 Oct 2000
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2002-463268 [49]

AB DERWENT ABSTRACT:

NOVELTY - **Detecting** (M1) target nucleic acid (NA) in sample solution (SS), involves attaching first probe (P1) to solid surface (I), contacting (I) with SS, contacting (I) with second semiconductor nanoparticle (N2) to which second probe (P2) has been attached, contacting (I) with first nanoparticle (N1) to which P1 has been attached, where N1 has been pre-incubated with NA, and **detecting** presence of N1 and N2 on (I).

DETAILED DESCRIPTION - **Detecting** (M1) a target nucleic acid in a sample solution, where the target nucleic acid comprises a first and second end sequence, where one of the end sequences is a 5' end sequence and the other end sequence is a 3' end sequence, involves: (a) attaching a first oligonucleotide probe to a solid surface, where at least a portion of the probe is complementary to the first end sequence of the target nucleic acid; (b) contacting the solid surface with the sample solution, thus allowing the first probe to bind the target nucleic acid; (c) providing a second semiconductor nanoparticle to which a second oligonucleotide probe has been attached, at least a portion of which is complementary to the second end sequence of the target nucleic acid; (d) contacting the solid surface with the second nanoparticle, thus allowing the second probe to bind the bound target nucleic acid; (e) providing a first semiconductor nanoparticle to which a first oligonucleotide probe has been attached, and pre-incubating the first nanoparticle with the target nucleic acid, thus allowing the first probe to bind the target nucleic acid; (f) contacting the solid surface with the pre-incubated first nanoparticle, thus allowing the target nucleic acid bound to the first probe to bind the second probe on the second nanoparticle; (g) optionally alternately repeating the steps of contacting the solid surface with the first and second semiconductor nanoparticles one or more times; and (h) **detecting** the presence of the nanoparticles on the solid surface, thus **detecting** the target nucleic acid.

INDEPENDENT CLAIMS are also included for the following: (1) fabricating (M2) a multi-layered **array** of semiconductor nanoparticles crosslinked by nucleic acid comprises the steps of M1, where the solid support is an **electrode**, except for the step of **detecting** the presence of the nanoparticles on the solid surface; (2) a semiconductor device (II) comprising a dendritic nanoparticle **array** comprising semiconductor nanoparticles cross-linked by nucleic acid chains; (3) a system (III) for identifying a target nucleic acid sequence in a sample comprises a biochip comprising a number of **arrays** of functionalized solid surfaces each of which may act as transducer, where each of the surfaces has an oligonucleotide probe bound to it, where at least a portion of the probe is complementary to a different segment of a target nucleic acid sequence, and each of the **arrays** are specific for a different target nucleic acid sequence, and semiconductor nanoparticles functionalized with oligonucleotide probes, at least a portion of which is complementary to one end sequence or the other end sequence of one of the target nucleic acid sequences; and (4) a kit (IV) for the **detection** of a target nucleic acid sequence in a sample containing a mixture of nucleic acids comprises a functionalized solid surface which acts as a transducer and has a probe attached to it, and semiconductor nanoparticles functionalized with oligonucleotide probes, at least a portion of which is complementary to one end sequence or the other end sequence of the target nucleic acid sequence.

BIOTECHNOLOGY - Preferred Method: In M1, the nanoparticle comprises

a semiconducting compound selected from CdS, CdSe, GaAs, PbS and ZnS. The nanoparticle comprises the same or different semiconducting compound. The nanoparticles are **detected** optically, photoelectrochemically, by fluorescence **detection**, by light absorbance, or by measuring current flow or voltage. The solid surface comprises a glass or polymer support. The solid support is an **electrode**. M1 further comprises before **detecting** the presence of the nanoparticles on the solid support, the step of incubating the solid surface with an electron mediator capable of binding nucleic acids. The electron mediator is an organic compound, a **transition metal** complex or a metallic nanorod. In M1, the second semiconductor nanoparticle is pre-incubated with the target nucleic acid. In M2, the semiconductor nanoparticle is a semiconductor nanoparticle electronic circuit comprising electron mediator functionalized nucleic acid or comprising semiconductor **arrays** crosslinked by nanometallic rods. The method further comprises incubating the **electrode** with an electron mediator or metal capable of binding nucleic acids. Preferred System: In (III), the different target nucleic acid sequences are sequences of different pathogenic microorganisms, different tissues or different individuals, or sequences related to different genetic diseases.

USE - M1 is useful for **detecting** a target nucleic acid such as DNA or RNA in a sample solution (claimed).

EXAMPLE - A first oligonucleotide probe e.g., 5'-TCTATCCTACGCT-(CH₂)₆-SH-3' which was complementary to the 5' end of a target DNA (5'-AGCGTAGGATAGATATACGGTTCGCGC-3'), was attached to an Au-**electrode** and the **electrode** was then interacted with the sample solution containing the target DNA. CdS-nanoparticles were functionalized with thiolated first and second oligonucleotide probes. These two oligonucleotides were complementary to the 5' and 3' ends of the target DNA, respectively. **Electrode** was contacted with the second oligonucleotide probe (5'-HS-(CH₂)₆-GCGCGAACCGTATA-3') functionalized nanoparticles resulting in the binding of the CdS nanoparticles to the target DNA bound to the **electrode**. This was termed the first generation of the nanoparticle **array**. A further CdS nanoparticle functionalized with the first oligonucleotide probe was pre-incubated with the target DNA so that the target DNA bound to some of the probes extending from the nanoparticle. The **electrode** carrying the first nanoparticle generation was contacted with the first probe-functionalized and target DNA-pre-incubated nanoparticles resulting in the binding of the pre-incubated nanoparticles to the first generation nanoparticles. This was termed as the second generation of the nanoparticle **array**. Further alternate contacting of the **electrode** with solutions consisting of the second probe functionalized CdS nanoparticles and the first probe functionalized CdS-nanoparticles resulted in an **array** with a controlled number of CdS-nanoparticle generations. The number of nanoparticles increased exponentially as a function of the number of generations, and formed a dendritic architecture. The fabrication of the **array** was only made possible by the presence of the target DNA. In this way, **detection** of the presence of the nanoparticle **array** was indicative of the presence of the target DNA. (30 pages)

L15 ANSWER 13 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:123440 HCAPLUS

DOCUMENT NUMBER: 136:160585

TITLE: Micro-machined thin film sensor **arrays** for the **detection** of H₂, NH₃, and sulfur-containing gases, and method of making and using the same

INVENTOR(S): Dimeo, Frank; Baum, Thomas H.

PATENT ASSIGNEE(S): USA

SOURCE: U.S. Pat. Appl. Publ., 32 pp., Cont.-in-part of U.S.
6,265,222
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 4
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002017126	A1	20020214	US 2001-828115	20010406
US 6596236	B2	20030722		
US 6006582	A	19991228	US 1998-42698	19980317
US 6029500	A	20000229	US 1998-81957	19980519
US 6265222	B1	20010724	US 1999-231277	19990115
TW 546476	B	20030811	TW 2002-91106712	20020403
WO 2002082045	A2	20021017	WO 2002-US10598	20020405
WO 2002082045	A3	20030417		
WO 2002082045	B1	20040521		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1384059	A2	20040128	EP 2002-731257	20020405
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2004519683	T2	20040702	JP 2002-579767	20020405
US 2003153088	A1	20030814	US 2003-370937	20030220
PRIORITY APPLN. INFO.:				
			US 1998-42698	A 19980317
			US 1998-81957	A 19980519
			US 1999-231277	A2 19990115
			US 2001-828115	A 20010406
			WO 2002-US10598	W 20020405

AB The present invention provides a hydrogen sensor including a thin film sensor element formed by metal organic CVD (MOCVD) or phys. vapor deposition (PVD), on a micro-hotplate structure. The thin film sensor element includes a film of a hydrogen-interactive metal film that reversibly interacts with hydrogen to provide a correspondingly altered response characteristic, such as optical transmissivity, elec. conductance, elec. resistance, elec. capacitance, magneto resistance, photocond., etc., relative to the response characteristic of the film in the absence of hydrogen. The hydrogen-interactive metal film may be overcoated with a thin film hydrogen-permeable barrier layer to protect the hydrogen-interactive film from deleterious interaction with nonhydrogen species. The hydrogen permeable barrier may comprise species to scavenge oxygen and other like species. The hydrogen sensor of the invention may be usefully employed for the **detection** of hydrogen in an environment susceptible to the incursion or generation of hydrogen and may be conveniently configured as a hand-held apparatus

L15 ANSWER 14 OF 19 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN

ACCESSION NUMBER: 2002:978469 SCISEARCH

THE GENUINE ARTICLE: 621KX

TITLE: SERS mechanism of nickel **electrode**

AUTHOR: Yang Z L; Wu D Y; Yao J L; Hu J Q; Ren B; Zhou H G; Tian Z Q (Reprint)

CORPORATE SOURCE: Xiamen Univ, Dept Chem, State Key Lab Phys Chem Solid Surfaces, Xiamen 361005, Peoples R China (Reprint); Xiamen Univ, Dept Phys, Xiamen 361005, Peoples R China

COUNTRY OF AUTHOR: Peoples R China

SOURCE: CHINESE SCIENCE BULLETIN, (DEC 2002) Vol. 47, No. 23, pp. 1983-1986.
 Publisher: SCIENCE CHINA PRESS, 16 DONGHUANGCHENGGEN NORTH ST, BEIJING 100717, PEOPLES R CHINA.
 ISSN: 1001-6538.

DOCUMENT TYPE: Article; Journal

LANGUAGE: English

REFERENCE COUNT: 18

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Based on the theoretical model for the two-dimensional **arrays**, the dependence of the surface-enhanced Raman scattering (SERS) effect of nickel **electrode**, especially the ordered two-dimensional nanowires, on the incident photon energy in the range of 0.6-4.0 eV are analyzed, and most of the works are focused on the effect of the shape of nano-particles. The theoretical analysis shows that nickel can exhibit weak surface-enhanced Raman scattering effect when the surface is roughened properly, and the enhancement factor is about 10(2)-10(4). Compared to the typical highly SERS-active Ag substrate, the SERS of nickel does not show the character of surface plasma resonance of the metal. The calculated result shows that the lightning-rod effect contributes the most to the SERS of Ni nanowires in the EM mechanism. The theoretical prediction is in good agreement with the experimental result qualitatively and may be instructive to finding a new method to fabricate the SERS-active **transition-metal** substrate.

L15 ANSWER 15 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:618212 HCAPLUS

DOCUMENT NUMBER: 135:177678

TITLE: Protein and peptide sensors using electrical **detection** methods

INVENTOR(S): Sawyer, Jaymie Robin; Li, Changming; Choong, Vi-En; Maracas, George; Zhang, Peiming

PATENT ASSIGNEE(S): Motorola, Inc., USA

SOURCE: PCT Int. Appl., 53 pp.
 CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001061053	A2	20010823	WO 2001-US5476	20010220
WO 2001061053	A3	20020314		
WO 2001061053	C2	20021017		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6824669	B1	20041130	US 2000-506178	20000217
CA 2404492	AA	20010823	CA 2001-2404492	20010220
EP 1257820	A2	20021120	EP 2001-911028	20010220
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				

US 2005023155 A1 20050203 US 2003-203874 20030609
PRIORITY APPLN. INFO.: US 2000-506178 A2 20000217
WO 2001-US5476 W 20010220

AB The present invention provides an apparatus and methods for the elec.
detection of mol. interactions between a probe mol. and a protein
or peptide target mol., but without requiring the use of electrochem. or
other reporters to obtain measurable signals. The methods can be used for
elec. **detection** of mol. interactions between probe mols. bound
to defined regions of an **array** and protein or peptide target
mols. which are permitted to interact with the probe mols.
Streptavidin-modified porous polyacrylamide hydrogel microelectrodes were
prepared Biotinylated polyclonal antibodies to Escherichia coli were
immobilized on the microelectrodes and the sensor was used to
detect Escherichia coli.

L15 ANSWER 16 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:452915 HCAPLUS
DOCUMENT NUMBER: 135:43086
TITLE: Column-and-row-addressable high-density biochip
array
INVENTOR(S): Shi, Song; Zhang, Peiming; Maracas, George
PATENT ASSIGNEE(S): Motorola Inc., USA
SOURCE: PCT Int. Appl., 22 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001043870	A2	20010621	WO 2000-US34222	20001214
WO 2001043870	A3	20020221		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
CA 2393766	AA	20010621	CA 2000-2393766	20001214
EP 1251955	A2	20021030	EP 2000-984476	20001214
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR			
JP 2003517149	T2	20030520	JP 2001-544994	20001214
US 2002090649	A1	20020711	US 2001-945154	20010831
PRIORITY APPLN. INFO.:			US 1999-464500	A1 19991215
			US 2000-652284	A1 20000831
			WO 2000-US34222	W 20001214
			US 2001-299780P	P 20010620

AB The present invention provides a method and apparatus comprising a platform
for
a column-and-row-addressable high-d. biochip **array**. The apparatus
can be used as a high-d. biochip **array** for electronic or
electrochem. **detection** of mol. interactions between probe mols.
bound to defined regions of the **array** and target mols. exposed
to the **array**.

L15 ANSWER 17 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:435309 HCAPLUS
DOCUMENT NUMBER: 135:43123

TITLE: Methods and compositions relating to electrical
detection of nucleic acid hybridization or
peptide binding preferably using AC impedance
INVENTOR(S): Choong, Vi-en; Gallagher, Sean; Gaskin, Mike; Li,
Changming; Maracas, George; Shi, Song
PATENT ASSIGNEE(S): Motorola, Inc., USA
SOURCE: PCT Int. Appl., 63 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001042508	A2	20010614	WO 2000-US33497	20001211
WO 2001042508	A3	20020314		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 2002051975	A1	20020502	US 1999-458533	19991209
US 2002064775	A1	20020530	US 1999-459685	19991213
US 6518024	B2	20030211		
CA 2393733	AA	20010614	CA 2000-2393733	20001211
EP 1238114	A2	20020911	EP 2000-993326	20001211
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2003516165	T2	20030513	JP 2001-544379	20001211
US 2003096283	A1	20030522	US 2002-259532	20020927
US 2003209432	A1	20031113	US 2003-149319	20030228
PRIORITY APPLN. INFO.:			US 1999-458501	A 19991209
			US 1999-458533	A 19991209
			US 1999-459685	A 19991213
			WO 2000-US33497	W 20001211

AB This invention relates to the elec. **detection** of mol.
interactions between biol. mols.. The method generally rely on the mol.
interactions such as nucleic acid hybridization or protein-protein (for
example, antigen-antibody) binding reactions done on solid supports using
arrays of peptides or oligonucleotides for capture binding
ligands. As a result of these interactions, some electronic property of
the system changes, and **detection** is achieved. In a preferred
embodiment, the methods of the invention utilize AC impedance for the
detection. In some embodiments, no electrochem. or other label
moieties are used. In others, electrochem. active (ECA) labels are used
to **detect** reactions on hydrogel **arrays**, including
genotyping reactions such as the single base extension reaction.

L15 ANSWER 18 OF 19 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on
STN

ACCESSION NUMBER: 1999:688607 SCISEARCH

THE GENUINE ARTICLE: 232NY

TITLE: In situ fiber-optic oxygen consumption measurements from a
working mouse heart

AUTHOR: Zhao Y D; Richman A; Storey C; Radford N B; Pantano P
(Reprint)

CORPORATE SOURCE: UNIV TEXAS, DEPT CHEM, RICHARDSON, TX 75083 (Reprint);
UNIV TEXAS, DEPT CHEM, RICHARDSON, TX 75083; UNIV TEXAS,

SW MED CTR, MARY NELL & RALPH B ROGERS MAGNET RESONANCE
CTR, DEPT INTERNAL MED & RADIOL, DALLAS, TX 75235
COUNTRY OF AUTHOR: USA
SOURCE: ANALYTICAL CHEMISTRY, (1 SEP 1999) Vol. 71, No. 17, pp.
3887-3893.
Publisher: AMER CHEMICAL SOC, 1155 16TH ST, NW,
WASHINGTON, DC 20036.
ISSN: 0003-2700.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS; LIFE
LANGUAGE: English
REFERENCE COUNT: 50

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Luminescence-based imaging-fiber oxygen sensors (IFOSs) were utilized for the in situ measurement of oxygen consumption from intact perfused mouse hearts. IFOSs were fabricated using a technically expedient, photoinitiated polymerization reaction whereby an oxygen-sensitive polymer matrix was immobilized in a precise location on an imaging fiber's distal face. The oxygen-sensing layer used in this work comprised a **transition metal** complex, Ru(Ph(2)phen)(3)(2+), entrapped in a gas-permeable photopolymerizable siloxane membrane (PS802). The transduction mechanism was based upon the oxygen collisional quenching of the ruthenium complex luminescence; **detection** was performed utilizing an epi-fluorescence microscope/charge coupled device imaging system. IFOS measurements from working mouse hearts were validated through concurrent, blind, ex situ blood gas analyzer (BGA) measurements. The EGA and IFOS methodologies were utilized successfully to measure oxygen concentrations in aortic and pulmonary artery perfusates from the working mouse heart before and after isoproterenol administration. Coupled with coronary-flow measurements, these data were used to calculate myocardial oxygen consumption. Regression analysis of measurements of myocardial oxygen consumption showed that there was a strong correlation between the values generated by the EGA sampling and those obtained via in situ IFOS methods. To our knowledge, this research represents the first report of in situ fiber-optic sensor monitoring of oxygen content from the intact, beating mouse heart.

L15 ANSWER 19 OF 19 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1991:160323 HCAPLUS
DOCUMENT NUMBER: 114:160323
TITLE: Wholly microfabricated biosensors, and manufacture and use thereof
INVENTOR(S): Cozzette, Stephen N.; Davis, Graham; Itak, Jeanne A.; Lauks, Imants R.; Mier, Randall M.; Piznik, Sylvia; Smit, Nicolaas; Steiner, Susan J.; Van der Werf, Paul; Wieck, Henry J.
PATENT ASSIGNEE(S): I-Stat Corp., USA
SOURCE: PCT Int. Appl., 195 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9005910	A1	19900531	WO 1989-US5227	19891112
W: JP, KR				
RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
US 5200051	A	19930406	US 1989-432714	19891107
EP 442969	A1	19910828	EP 1990-900548	19891113
EP 442969	B1	20020227		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				

JP 04503249	T2	19920611	JP 1990-500757	19891113
JP 3105919	B2	20001106		
AT 213833	E	20020315	AT 1990-900548	19891113
CA 2002848	AA	19900514	CA 1989-2002848	19891114
CA 2002848	C	19990831		
CA 2221178	C	20010123	CA 1989-2221178	19891114
US 5063081	A	19911105	US 1990-567870	19900815
US 5212050	A	19930518	US 1990-568441	19900815
US 5466575	A	19951114	US 1992-943345	19920910
US 5554339	A	19960910	US 1993-109507	19930819
US 5837446	A	19981117	US 1995-482517	19950607
US 5837454	A	19981117	US 1995-484095	19950607
US 6306594	B1	20011023	US 1998-193370	19981117
JP 2000065791	A2	20000303	JP 1999-38753	19990217
JP 3137612	B2	20010226		
US 2002090738	A1	20020711	US 2001-941661	20010830
PRIORITY APPLN. INFO.:			US 1988-270171	A 19881114
			US 1989-381223	A 19890713
			US 1989-432714	19891107
			JP 1990-500757	A3 19891113
			WO 1989-US5227	W 19891113
			CA 1989-2002848	A3 19891114
			US 1992-943345	A3 19920910
			US 1995-484095	A3 19950607
			US 1998-193370	A1 19981117

OTHER SOURCE(S): MARPAT 114:160323

AB A microfabricated biosensor which may be uniformly mass produced comprises (a) a base sensor (e.g. an electrochem. transducer); (b) a permselective layer (e.g. a polymer film) optionally containing an ionophore, superimposed over at least part of layer (a) and sufficiently thick to pass mols. of mol. weight ≤ 50 and exclude mols. of mol. weight ≥ 120 ; and (c) a biolayer covering at least part of layer (b). The biolayer comprises (i) a bioactive mol. which selectively interacts with an **analyte** and (ii) a support matrix derived from a photoformable proteinaceous mixture and/or a film-forming latex through which the **analyte** can permeate. An electrolyte layer may be interposed between layers (a) and (b). Layer (c) may addnl. be covered by a layer which attenuates **analyte** transport and a photoresist cap. Layer (b) prevents electroactive interfering species from undergoing redox reactions at the indicator **electrode**. Methods for conducting assays (e.g. immunoassays) using the sensors are described. Thus, the base sensor for a glucose sensor comprised an **array** of unit cells on a Si wafer; each unit cell consisted of an Ag/AgCl reference/counter **electrode** and 2 Ir catalytic **electrodes** prepared by plasma deposition or sputtering and standard lithog. techniques including spin-coating with a pos. photoresist. Layer (b) was prepared by spin-coating an alc. solution of N-(2-aminoethyl)-3-aminopropyltrimethoxysilane onto the wafer and baking. Layer (c) was prepared from a mixture of fish gelatin and ferric ammonium citrate (photoinitiator) to which were added glucose oxidase, crosslinking agent (N,N'-methylenebisacrylamide), and a sugar alc. (to alter the porosity). An attenuation layer contained dimethylsiloxane-bisphenol A carbonate copolymer.

=> d his

(FILE 'HOME' ENTERED AT 09:59:33 ON 01 JUL 2005)

FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS, LIFESCI' ENTERED AT 10:00:00 ON 01 JUL 2005

L1 1033750 S ELECTRODE?
L2 442634 S ARRAY?

L3 23852 S L1 AND L2
 L4 4941 S SOLVENT (2W)ACCESSIBLE
 L5 3 S L3 AND L4
 L6 1 DUP REM L5 (2 DUPLICATES REMOVED)
 L7 248883 S TRANSITION (W)METAL?
 L8 101 S L3 AND L7
 L9 88 DUP REM L8 (13 DUPLICATES REMOVED)
 L10 1129452 S LIGAND?
 L11 11 S L9 AND L10
 L12 2 S L9 AND COORDINATION
 L13 5700021 S DETECT? OR ANALYTE?
 L14 19 S L9 AND L13
 L15 19 DUP REM L14 (0 DUPLICATES REMOVED)

=> s l1 and l4

L16 13 L1 AND L4

=> dup rem l16

PROCESSING COMPLETED FOR L16

L17 7 DUP REM L16 (6 DUPLICATES REMOVED)

=> d 1-7 ibib ab

L17 ANSWER 1 OF 7 MEDLINE on STN DUPLICATE 1
 ACCESSION NUMBER: 2005194099 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 15826095
 TITLE: Electrochemical nanofabrication using crystalline protein masks.
 AUTHOR: Allred Daniel B; Sarikaya Mehmet; Baneyx Francois; Schwartz Daniel T
 CORPORATE SOURCE: Chemical Engineering Department, University of Washington, Seattle, Washington 98195-1750, USA.
 SOURCE: Nano Lett, (2005 Apr) 5 (4) 609-13.
 Journal code: 101088070. ISSN: 1530-6984.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 200506
 ENTRY DATE: Entered STN: 20050414
 Last Updated on STN: 20050622
 Entered Medline: 20050621

AB We have developed a simple and robust method to fabricate nanoarrays of metals and metal oxides over macroscopic substrates using the crystalline surface layer (S-layer) protein of *Deinococcus radiodurans* as an **electrodeposition** mask. Substrates are coated by adsorption of the S-layer from a detergent-stabilized aqueous protein extract, producing insulating masks with 2-3 nm diameter **solvent-accessible** openings to the deposition substrate. The coating process can be controlled to achieve complete or fractional surface coverage. We demonstrate the general applicability of the technique by forming arrays of cuprous oxide (Cu(2)O), Ni, Pt, Pd, and Co exhibiting long-range order with the 18 nm hexagonal periodicity of the protein openings. This protein-based approach to electrochemical nanofabrication should permit the creation of a wide variety of two-dimensional inorganic structures.

L17 ANSWER 2 OF 7 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN DUPLICATE 2
 ACCESSION NUMBER: 2004:111964 SCISEARCH
 THE GENUINE ARTICLE: 764WR
 TITLE: Influence of alkylaminopyridine additives in electrolytes on dye-sensitized solar cell performance
 AUTHOR: Kusama H (Reprint); Arakawa H

CORPORATE SOURCE: Natl Inst AIST, PCRC, AIST Tsukuba Cent 5, 1-1-1 Higashi,
Tsukuba, Ibaraki 3058565, Japan (Reprint); Natl Inst AIST,
PCRC, Tsukuba, Ibaraki 3058565, Japan
COUNTRY OF AUTHOR: Japan
SOURCE: SOLAR ENERGY MATERIALS AND SOLAR CELLS, (25 JAN 2004) Vol.
81, No. 1, pp. 87-99.
Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE
AMSTERDAM, NETHERLANDS.
ISSN: 0927-0248.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 21

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The influence of alkylaminopyridine additives on the performance of a
bis(tetrabutylammonium) cis-bis(thiocyanato)bis(2,2'-bipyridine-4-
carboxylic acid, 4'-carboxylate) ruthenium(II) dye-sensitized TiO₂ solar
cell with an I-/I-3(-) redox electrolyte in acetonitrile was studied. 3
The current-voltage characteristics were measured for more than 20
different alkylaminopyridines under AM 1.5 (100 mW/cm²). The
alkylaminopyridine additives tested had varying effects on the performance
of the cell. All the additives decreased the short circuit photocurrent
density (J(sc)), but increased the open-circuit photovoltage (V-oc) of the
solar cell. Molecular orbital calculations imply that the dipole moment of
the alkylaminopyridine molecules influences the J(sc) of the cell and that
the size, **solvent accessible** surface area, and
ionization energy all affect the V-oc of the cell. The highest V-oc of
0.88 V was observed in an electrolyte containing 4-pyrrolidinopyridine,
which is comparable to the maximum V-oc of 0.9 V for a cell consisting of
TiO₂ **electrode** and I-/I-3(-) redox system. (C) 2003 Elsevier
B.V. All rights reserved.

L17 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:881693 HCAPLUS
DOCUMENT NUMBER: 141:102441
TITLE: A comparative study of electrochemically and
fluorometrically addressed molecular reporter groups:
effects of protein microenvironment
AUTHOR(S): Trammell, Scott A.; Jhaveri, Sulay D.; LaBrenz, Steven
R.; Mauro, J. Matthew
CORPORATE SOURCE: Center for Bio/Molecular Science and Engineering, Code
6900, US Naval Research Laboratory, Washington, DC,
20375, USA
SOURCE: Biosensors & Bioelectronics (2003), 19(4), 373-382
CODEN: BBIOE4; ISSN: 0956-5663
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB To probe the effects of protein microenvironment on electrochem. and
fluorometrically addressed mol. reporter groups, genetically engineered
apo-cytochrome c peroxidase derivs. W51C, A174C, K243C, and S246C, each
containing a single cysteine residue, were labeled at identical sites with
two

kinds of microenvironment sensitive reporters, either an electrochem.
active sulfhydryl-reactive reagent, [Ru(II)(NH₃)₄(1,10-phenanthroline-5-
maleimide)](PF₆)₂ [RuPA4] or a fluorescent 6-acryloyl-2-
dimethylaminonaphthalene [acrylodan] probe. Two types of sites were
labeled with each probe based on their predicted solvent accessibilities
from the known structure for holo-cytochrome c peroxidase. One set of
sites (K243C and S246C) was selected to be completely solvent exposed,
while the other two sites (W51C and A174C) were less accessible, residing
in or near the heme binding site. Spectroscopic properties of the
fluorescent probe were consistent with predictions for relative solvent
accessibilities; however, even the less **solvent**

accessible probes reported a quite polar environment, suggesting that this region of the apo-protein is either substantially solvent exposed or undergoes significant dynamic motion. A linear correlation was observed between the λ_{max} of the metal to ligand charge-transfer (MLCT) absorption band of the RuPA4 complex and the acrylodan emission maximum for the four labeled apo-protein variants. The same trend occurred for the formal potential of RuPA4 vs. the acrylodan emission maximum, with the exception of electrochem. probe behavior at position 174, possibly due to specific probe-protein interactions.

REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 4 OF 7 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
ACCESSION NUMBER: 2001:481677 BIOSIS
DOCUMENT NUMBER: PREV200100481677

TITLE: Mutational analysis reveals the importance of a novel domain of the GABAA receptor alpha 1 subunit for agonist/antagonist binding.

AUTHOR(S): Newell, J. G. [Reprint author]; Czajkowski, C. [Reprint author]

CORPORATE SOURCE: Department of Physiology, University of Wisconsin, Madison, WI, USA

SOURCE: Society for Neuroscience Abstracts, (2001) Vol. 27, No. 1, pp. 85. print.

Meeting Info.: 31st Annual Meeting of the Society for Neuroscience. San Diego, California, USA. November 10-15, 2001.

ISSN: 0190-5295.

DOCUMENT TYPE: Conference; (Meeting)

Conference; Abstract; (Meeting Abstract)

LANGUAGE: English

ENTRY DATE: Entered STN: 17 Oct 2001

Last Updated on STN: 23 Feb 2002

AB The GABAA receptor agonist/antagonist binding site at the beta-alpha subunit interface has been partially defined by site-directed mutagenesis and photolabelling studies. Implicated amino acid residues occur within clusters that have been arbitrarily designated "loops A-F". To date, amino acid residues from the putative "loop F" of the GABAA R have not been implicated in neurotransmitter binding. We have therefore used the substituted cysteine accessibility method (SCAM) to probe the P174-D191 region of the GABAA R alpha 1 subunit in order to evaluate its contribution to the formation of the GABA site. Each residue was individually mutated to cysteine, expressed with wild-type beta 2 subunits in *Xenopus* oocytes, and examined using the two-electrode voltage clamp technique. Wild-type alpha 1beta2 receptors were activated by GABA with an apparent affinity of $1.6 \pm 0.5 \mu\text{M}$. Cysteine substitutions within the P174-D191 region of the alpha 1 subunit were well tolerated and produced moderate rightward shifts in the concentration-response curves for GABA with no reduction in the maximum amplitude of the current. Modification of engineered cysteine residues by methanethiosulfonate compounds revealed that several residues within this region are found within a **solvent accessible** domain of the protein. Protection of amino acid residues from derivitization by co-application of MTSEA-biotin and GABA/muscimol or SR95531 suggests that they play a role in the formation of the agonist/antagonist binding site.

L17 ANSWER 5 OF 7 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN
DUPLICATE 3

ACCESSION NUMBER: 1998:794880 SCISEARCH

THE GENUINE ARTICLE: 126HM

TITLE: Resonance Raman and surface-enhanced resonance Raman studies of polymer-modified **electrodes** which mimic heme enzymes

AUTHOR: Bell S E J (Reprint); Devenney M D; Grimshaw J; Hara S;
Rice J H; TrochaGrimshaw J
CORPORATE SOURCE: QUEENS UNIV BELFAST, SCH CHEM, BELFAST BT9 5AG, ANTRIM,
NORTH IRELAND (Reprint)
COUNTRY OF AUTHOR: NORTH IRELAND
SOURCE: JOURNAL OF THE CHEMICAL SOCIETY-FARADAY TRANSACTIONS, (7
OCT 1998) Vol. 94, No. 19, pp. 2955-2960.
Publisher: ROYAL SOC CHEMISTRY, THOMAS GRAHAM HOUSE,
SCIENCE PARK, MILTON ROAD, CAMBRIDGE CB4 4WF, CAMBS,
ENGLAND.
ISSN: 0956-5000.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS
LANGUAGE: English
REFERENCE COUNT: 39

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Iron-5,10,15,20-tetraphenylporphyrin (FeTPP) has been incorporated into films of a coordinating hydrogel polymer support medium, poly(gamma-ethyl-L-glutamate) (PEG) functionalised with imidazole pendant arms (PEG-Im), and studied in situ on silver **electrodes** using a combination of both resonance Raman (RR) and surface-enhanced resonance Raman (SERR) spectroscopy. The SERR spectra give information on the portion of the film close to the **electrode** surface while RR spectra probe the 'bulk' of the film. At open-circuit potentials the RR spectra are characteristic of the expected low-spin Fe-III(TPP)(PEG-Im), complex formed by axial ligation but the SERR spectra show that, at the **electrode** surface, the complex is composed primarily of Fe-III(TPP)(PEG-Im). The reasons for the difference have been investigated by systematic RR and SERR studies of both PEG-Im and a more inert polymer support based on simple PEG, which does not carry any potentially ligating imidazole pendant arms. On application of a reducing potential (-400 mV vs. SSCE) only partial reduction is observed at the surface of the PEG-Im films. However, RR spectra of the reduced films show complete and reversible conversion to the expected Fe-II(TPP)(PEG-Im), complexes so that the low electrochemical activity near the surface does not prevent efficient electron transport from the **electrode** surface right through the thickness of the doped polymer layer. There are striking similarities between the properties of this model system, which contains multiple randomly oriented iron porphyrins which are bis-axially coordinated by imidazoles in a **solvent accessible** poly(amino acid) matrix, and those of cytochrome c(3), which is a tetraheme protein of low molecular weight. In cyt c(3) the Fe-III hemes, which are bis-coordinated by histidine residues, lie close to each other and again show efficient inter-heme electron transfer. The structure of the synthetic PEG-Im film model appears to be sufficiently close in structure to the enzyme that it also reproduces the main features of its behaviour.

L17 ANSWER 6 OF 7 MEDLINE on STN . DUPLICATE 4
ACCESSION NUMBER: 81159983 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7213343
TITLE: Degradation of protein disulphide bonds in dilute alkali.
AUTHOR: Florence T M
SOURCE: Biochemical journal, (1980 Sep 1) 189 (3) 507-20.
Journal code: 2984726R. ISSN: 0264-6021.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198105
ENTRY DATE: Entered STN: 19900316
Last Updated on STN: 19970203
Entered Medline: 19810513

AB The degradation of S--S bonds in 0.2 M-NaOH at 25 degrees C was studied for a series of proteins and simple aliphatic disulphide compounds, by using cathodic stripping voltammetry, ion-selective-**electrode** potentiometry, spectrophotometry and ultrafiltration. The disulphide bonds that dissociated in 0.2 M-NaOH were usually those that are **solvent accessible** and that can be reduced by mild chemical reductants. Some unexpected differences were found between similar proteins, both in the number of S--S bonds dissociated and in their rates of decomposition. Chymotrypsin has one S--S bond attacked, whereas chymotrypsinogen and trypsinogen have two. Ribonuclease A has two S--S bonds dissociated, but ribonuclease S and S-protein have three. Denaturation in 6 M-guanidine hydrochloride before alkaline digestion caused the loss of an additional S--S bond in ribonuclease A and insulin, and increased the rate of dissociation of the S--S bonds of some other proteins. The initial product of S--S bond dissociation in dilute alkali is believed to be a persulphide intermediate formed by a beta-elimination reaction. This intermediate is in mobile equilibrium with bisulphide ion, HS-, and decomposes at a mercury **electrode** or in acid solution to yield a stoichiometric amount of sulphide. Rate constants and equilibrium constants were measured for the equilibria between HS- and the intermediates involved in the alkaline dissociation of several proteins. Elemental sulphur was not detected in any of the protein digests. It is suggested that formation of HS- from a persulphide intermediate involves a hydrolysis reaction to yield a sulphenic acid derivative. The small polypeptides glutathione and oxytocin gave only a low yield of persulphide, and their alkaline decomposition must proceed by a mechanism different from that of the proteins.

L17 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1979:182552 HCAPLUS

DOCUMENT NUMBER: 90:182552

TITLE: Cathodic stripping voltammetry. Part II. Study of the release of inorganic sulfide from proteins during denaturation in alkaline media

AUTHOR(S): Florence, T. M.

CORPORATE SOURCE: Anal. Chem. Sect., Aust. At. Energy Comm. Res. Establ., Lucas Heights, Australia

SOURCE: Journal of Electroanalytical Chemistry and Interfacial Electrochemistry (1979), 97(2), 237-55
CODEN: JEIEBC; ISSN: 0022-0728

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The concentration of inorg. HS1- liberated from a wide range of proteins denatured in 0.2M NaOH at 25° was measured by direct cathodic stripping voltammetry (CSV) as well as by ion-selective **electrode** potentiometry and CSV after separation of the H2S by an isothermal microdiffusion technique. The HS1- produced in 0.2M NaOH was equivalent to the number of protein SS bridges broken, and by using several model proteins, it was shown that only surface, or **solvent-accessible** SS bonds are attacked. The reaction obeyed 1st-order kinetics, and the rate was proportional to OH- concentration. Some simple SS compds. also were studied, and possible reaction mechanisms for the formation of HS1- are discussed. Normal and cancerous blood serum samples were analyzed by CSV measurement of the SS released in alkali, both before and after separation of the albumin and globulin by precipitation and gel-permeation chromatog.

=> d his

(FILE 'HOME' ENTERED AT 09:59:33 ON 01 JUL 2005)

FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS, LIFESCI' ENTERED AT 10:00:00 ON 01 JUL 2005

L1 1033750 S ELECTRODE?
L2 442634 S ARRAY?
L3 23852 S L1 AND L2
L4 4941 S SOLVENT (2W)ACCESSIBLE
L5 3 S L3 AND L4
L6 1 DUP REM L5 (2 DUPLICATES REMOVED)
L7 248883 S TRANSITION (W)METAL?
L8 101 S L3 AND L7
L9 88 DUP REM L8 (13 DUPLICATES REMOVED)
L10 1129452 S LIGAND?
L11 11 S L9 AND L10
L12 2 S L9 AND COORDINATION
L13 5700021 S DETECT? OR ANALYTE?
L14 19 S L9 AND L13
L15 19 DUP REM L14 (0 DUPLICATES REMOVED)
L16 13 S L1 AND L4
L17 7 DUP REM L16 (6 DUPLICATES REMOVED)

=> s l1 and l7

L18 8479 L1 AND L7

=> s l10 and l18

L19 663 L10 AND L18

=> s l13 and l19

L20 50 L13 AND L19

=> dup rem l20

PROCESSING COMPLETED FOR L20

L21 41 DUP REM L20 (9 DUPLICATES REMOVED)

=> s l21 and coordination

L22 1 L21 AND COORDINATION

=> d all

L22 ANSWER 1 OF 1 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN

AN 97:235323 SCISEARCH

GA The Genuine Article (R) Number: WN851

TI Organometallic and **coordination** chemistry on phosphazenes .3.
Synthesis, characterization, and electrochemical behavior of
transition metal-cinnamionitrile cyclophosphazene
derivatives

AU Gleria M (Reprint); Bertani R; Facchin G; Noe F; Michelin R A; Mozzon M;
Pombeiro A J L; daSilva M F C G; Machado I L F

CS CNR, IST FOTOCHIM & RADIAZ ALTA ENERGIA, SEZ LEGNARO, VIA ROMEA 4, I-35020
PADUA, ITALY (Reprint); UNIV PADUA, CNR, CTR CHIM & TECNOL COMPOSTI MET
ORGAN ELEMENTI TRA, I-35131 PADUA, ITALY; UNIV PADUA, IST CHIM IND,
I-35131 PADUA, ITALY; INST SUPER TECN, CTR QUIM ESTRUTURAL, P-1096 LISBON,
PORTUGAL

CYA ITALY; PORTUGAL

SO JOURNAL OF INORGANIC AND ORGANOMETALLIC POLYMERS, (SEP 1996) Vol. 6, No.
3, pp. 145-170.

Publisher: PLENUM PUBL CORP, 233 SPRING ST, NEW YORK, NY 10013.

ISSN: 1053-0495.

DT Article; Journal

FS PHYS

LA English

REC Reference Count: 42

AB Hexakis(4-formylphenoxy)cyclophosphazene (1) reacts with six

equivalents of cyanomethylenetriphenylphosphorane to give hexakis(4-cinnamionitrile)cyclotriphosphazene bearing 12 functional groups (six nitriles and six olefins) able to coordinate up to 12 metals. In this way a series of polynuclear phosphazene metal derivatives (8-12) was prepared with different **transition metals** and in different oxidation states, Pt(0), Pt(II), and Rh(I). The analogous cinnamionitrile derivatives (3-7) were prepared and used as models for the characterization of corresponding phosphazene compounds. The redox properties of the complexes 3-5 and 8-10 as well as of the Free cinnamionitrile 2 and the free substituted cyclophosphazene 1 have been investigated by cyclic voltammetry (CV) and controlled potential electrolysis (CPE) in aprotic media (THF, CH₂Cl₂, or NCMe/0.2 M [NBu(4)][BF₄]), at Pt **electrodes**. Cathodic processes have been **detected** only when the unsaturated C=C bond of the cinnamionitrile group is uncoordinated; hence, for compounds 1, 4, and 9, they are irreversible, occur at potentials E(p)(red) ca. -1.3 to ca. -1.9 V vs SCE, which are less cathodic than that exhibited by the tier cinnamionitrile (2; E(p)(red) ca. -2.0 V vs SCE), and are believed to be centered at the electron-acceptor empty pi* (C=C) orbital of each of the cinnamionitrile groups present in the molecule. Anodic processes are displayed only by complexes 3, 5, 8 and 10 with at least one Pt(0) site; they are irreversible, conceivable centered at such a metal center, and occur at potentials (E(p)(ox) ca. -1.2 V vs SCE) which are dependent on the electronic effects of the **ligands**, in particular the strong electron-withdrawing ability of the cyclophosphazene group. Complex 10 undergoes dissociation in NCMe to form 9 and possibly solvated [Pt(PPh(3))(2)] species which adsorb at the **electrode** surface. No evidence for any redox process centered at the phosphazene ring has been found.

CC POLYMER SCIENCE

ST Author Keywords: phosphazenes; **coordination** chemistry; synthesis; electrochemical behavior; **transition metal**; cinnamionitrile cyclophosphazene

STP KeyWords Plus (R): POLYMERIC PHOSPHAZENES; ELECTRONIC-PROPERTIES; DIETHYL FUMARATE; COMPLEXES; ELECTROHYDRODIMERIZATION; ELECTROREDUCTION; FERROCENE; ESTERS

RE

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MICHELIN R A	1979	175	239	J ORGANOMET CHEM
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TOLMAN C A	1983	2	614	ORGANOMETALLICS
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URBANOS F A	1984	276	185	J ORGANOMET CHEM
YANG K J	1987	12	45	TRANSIT METAL CHEM

=> d his

(FILE 'HOME' ENTERED AT 09:59:33 ON 01 JUL 2005)

FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS, LIFESCI' ENTERED AT 10:00:00 ON 01 JUL 2005

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L5      3 S L3 AND L4
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L12     2 S L9 AND COORDINATION
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L18     8479 S L1 AND L7
L19     663 S L10 AND L18
L20     50 S L13 AND L19
L21     41 DUP REM L20 (9 DUPLICATES REMOVED)
L22     1 S L21 AND COORDINATION

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=> d l21 1-41 ibib ab

L21 ANSWER 1 OF 41 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN

ACCESSION NUMBER: 2005:496609 SCISEARCH

THE GENUINE ARTICLE: 923KF

TITLE: Study of peptide on-line complexation with
transition-metal ions generated from
sacrificial **electrodes** in thin-chip polymer
microsprays

AUTHOR: Rohner T C; Girault H H (Reprint)

CORPORATE SOURCE: Ecole Polytech Fed Lausanne, Lab Electrochim Phys &
Analyt, CH-1015 Lausanne, Switzerland (Reprint)

COUNTRY OF AUTHOR: Switzerland
SOURCE: RAPID COMMUNICATIONS IN MASS SPECTROMETRY, (MAR 2005) Vol. 19, No. 9, pp. 1183-1190.
Publisher: JOHN WILEY & SONS LTD, THE ATRIUM, SOUTHERN GATE, CHICHESTER PO19 8SQ, W SUSSEX, ENGLAND.
ISSN: 0951-4198.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 42

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB A miniaturized polymer electrospray-type interface is used to study metal-ion chelation with model peptides. Taking advantage of the intrinsic electrochemical behavior of electrospray, a sacrificial **electrode** is used to generate at the same time electrospray and **transition-metal** ions coming from the anodic dissolution of the **electrode**. The microspray interface provides enhanced mass transport due to its small dimensions, increasing the yield of possible reactions, in particular complex formation. **Transition-metal electrodes**, e.g. copper, zinc, nickel, iron and silver, are used to obtain on-line complexation with model peptides. It is demonstrated that the use of in-reservoir sacrificial **electrodes** is an efficient way to generate metal ions in order to form and study complexes with peptides, avoiding the addition of metallic salts.
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L21 ANSWER 2 OF 41 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN
ACCESSION NUMBER: 2004-16412 BIOTECHDS

TITLE: New **transition metal** complexes with (pyridyl)imidazole **ligands** useful as redox mediators in electrochemical sensing applications e.g. electrochemical sensing of glucose; redox enzyme **electrode**, electrooxidation and electroreduction for biosensor construction

AUTHOR: MAO F; HELLER A
PATENT ASSIGNEE: MAO F; HELLER A
PATENT INFO: US 2004099529 27 May 2004
APPLICATION INFO: US 2003-714835 14 Nov 2003
PRIORITY INFO: US 2003-714835 14 Nov 2003; US 2001-290537 11 May 2001
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2004-419157 [39]

AB DERWENT ABSTRACT:

NOVELTY - **Transition metal** complexes with (pyridyl)imidazole **ligands** are new.

DETAILED DESCRIPTION - **Transition metal** complexes of formula (I) with (pyridyl)imidazole **ligands** are new. c = -1 - 5; d = 0-5; X = counter ion; M = cobalt, iron, osmium, ruthenium or vanadium; L1 = optionally substituted heterocyclic nitrogen containing **ligand**; L2 = negatively charged **ligand**; L and L' = group of formula (II); R'1 = alkyl, alkenyl or aryl (all optionally substituted); Ra-Rd, R'3 and R'4 = alkoxy carbonyl, alkylaminocarbonyl, dialkylaminocarbonyl, alkoxy, alkylamino, dialkylamino, alkanoylamino, arylcarboxamido, hydrazino, alkylhydrazino, hydroxylamino, alkoxyamino, alkylthio, alkenyl, aryl or alkyl (all optionally substituted), H, halo, NO2, CN, CO2H, SO3H, NHNH2, SH, OH or NH2; and R'3+R'4 and Rc+Rd = 5- or 6-membered ring. An INDEPENDENT CLAIM is included for a sensor comprising a working **electrode**, a counter **electrode** and a redox mediator of formula (I) that is disposed proximate to the working **electrode**.

USE - As redox mediators in electrochemical sensing applications e.g. electrochemical sensing of glucose, important in the treatment of diabetes. Also used as a redox mediator in combination with a redox enzyme to electrooxidize or electroreduce the **analyte** or a

compound derived from the **analyte**.

ADVANTAGE - The complexes are stable and are able to operate in a range of redox potentials at which electrochemical activity of interfering species is minimized and good kinetic activity is maintained. The complexes can enable accurate, reproducible and quick or continuous assays.

EXAMPLE - 1-Methyl-2-(2-pyridyl)imidazole (3.4 g) and ammonium hexahloroosmate (IV) (4.7 g) were combined with anhydrous ethylene glycol (86 ml). The mixture was degassed with nitrogen for 15 minutes. The mixture was stirred and heated at 130 degreesC for 2 hours and then at 140 degreesC for 28 hours to give solution (A). Sodium hydrosulfite (85 %, 9.31 g) was added to the degassed deionized water under nitrogen and degassing was continued for 10 - 15 minutes at below 5 degreesC to give solution (B). Then solution (A) was added to the solution (B) under rapid stirring for 0.5 hours. After worked-up, osmium bis(1-methyl-2-(2-pyridyl)imidazole) dichloride (C) (5.6 g) was obtained. To (C) (3.1 g), anhydrous ethanol (1 l) was added under nitrogen and heated to reflux. To this solution 1-methyl imidazole (0.43 ml) was added and the reflux was continued. After worked-up, (osmium(1-methyl-2-(2-pyridyl)imidazole)₂(1-methylimidazole)Cl)₂·2Cl⁻ (2.4 g) was obtained. (23 pages)

L21 ANSWER 3 OF 41 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN

ACCESSION NUMBER: 2004:1075816 SCISEARCH

THE GENUINE ARTICLE: 875WF

TITLE: Synthesis, photophysical characterisation and metal ion binding properties of new **ligands** containing anthracene chromophores

AUTHOR: Bolletta F; Andrea G; Montalti M; Prodi L (Reprint); Romano S; Zaccheroni N; Canovese L; Chessa G; Santo C; Visentin F

CORPORATE SOURCE: Univ Bologna, Dipartimento Chim G Ciamician, Via Selmi 2, I-40126 Bologna, Italy (Reprint); Univ Bologna, Dipartimento Chim G Ciamician, I-40126 Bologna, Italy; Univ Venice, Dipartimento Chim, I-30123 Venice, Italy

COUNTRY OF AUTHOR: Italy

SOURCE: INORGANICA CHIMICA ACTA, (15 NOV 2004) Vol. 357, No. 14, pp. 4078-4084.
Publisher: ELSEVIER SCIENCE SA, PO BOX 564, 1001 LAUSANNE, SWITZERLAND.
ISSN: 0020-1693.

DOCUMENT TYPE: Article; Journal

LANGUAGE: English

REFERENCE COUNT: 23

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Two new fluorescent chemosensors for heavy metal ions have been synthesised and their photophysical properties have been investigated. They present a pyridyl-thioether-based binding site and the anthracene moiety as a chromophore. In the experimental conditions used, no evidence is found for the formation of complexes with Pb²⁺, Zn²⁺, Cd²⁺, and Ag⁺ ions. On the contrary, in acetonitrile solutions both **ligands** strongly bind Cu²⁺ and Hg²⁺ cations according to a 1:1 and a 1:2 (metal: **ligand**) stoichiometry. In these complexes, the intense luminescence typical of anthracene derivatives is almost completely quenched and this phenomenon can be mainly attributed to an intraligand electron transfer process from the anthracene chromophore to the complexed pyridine. These results are of interest for the development of new chemosensors for the design of efficient electronic tongues for the **detection of transition metal** ions. (C) 2004 Elsevier B.V. All rights reserved.

L21 ANSWER 4 OF 41 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on

STN

ACCESSION NUMBER: 2004:676198 SCISEARCH
THE GENUINE ARTICLE: 839XL
TITLE: Electrochemistry of **transition metal**
complex catalysts - Part 10. Intra- and intermolecular
electrochemically activated C-H addition to the central
metal atom of a P-C-P-pincer iridium complex
AUTHOR: Novak F; Speiser B (Reprint); Mohammad H A Y; Mayer H A
CORPORATE SOURCE: Univ Tübingen, Inst Organ Chem, Auf Morgenstelle 18,
D-72076 Tübingen, Germany (Reprint); Univ Tübingen, Inst
Organ Chem, D-72076 Tübingen, Germany; Univ Tübingen, Inst
Anorgan Chem, D-72076 Tübingen, Germany
COUNTRY OF AUTHOR: Germany
SOURCE: ELECTROCHIMICA ACTA, (15 SEP 2004) Vol. 49, No. 22-23, pp.
3841-3853.
Publisher: PERGAMON-ELSEVIER SCIENCE LTD, THE BOULEVARD,
LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, ENGLAND.
ISSN: 0013-4686.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 42

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The electrochemical properties of a promising catalyst for C-H bond
activation are investigated. This P-C-P-pincer complex of iridium exhibits
an intramolecular C-H oxidative addition at room temperature, which
becomes enhanced upon oxidation. The reaction product is **detected**
by cyclic voltammetry. Mechanistic, kinetic, and thermodynamic information
is extracted from experiments in combination with digital simulation.
Multicycle voltammograms and voltammograms of mixtures consistently
suggest an extended square scheme as the **electrode** reaction
mechanism. The unsubstituted parent compound shows a more complex redox
behavior including a coupled ECE sequence. Intermolecular C-H activation
by reaction of the complex in the presence of cyclooctane is indicated by
characteristic changes in the cyclic voltammograms. (C) 2004 Elsevier Ltd.
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L21 ANSWER 5 OF 41 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN

ACCESSION NUMBER: 2003-22625 BIOTECHDS
TITLE: Modifying **electrode** surface by
electrodepositing redox polymers comprising a complex
of **transition metal**, first **ligand**
of the complex, and second **ligand**, to form a redox
polymer film on a portion of **electrode** surface;
DNA or enzyme immobilization on surface support and enzyme
electrode for biosensor or DNA biosensor
construction
AUTHOR: HELLER A; GAO Z; DEQUAIRE M
PATENT ASSIGNEE: THERASENSE INC
PATENT INFO: WO 2003025257 27 Mar 2003
APPLICATION INFO: WO 2002-US30105 20 Sep 2002
PRIORITY INFO: US 2002-251513 19 Sep 2002; US 2001-324078 21 Sep 2001
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2003-617858 [58]

AB DERWENT ABSTRACT:
NOVELTY - Modifying an **electrode** surface (ES), involves
providing ES, providing redox polymers at the ES, each redox polymer
comprising a complex of a **transition metal**, a first
ligand of the complex, and a second **ligand**, the redox
polymer providing sufficient complex which centers at a portion of ES for
electrodeposition of polymers, and **electrodepositing**
redox polymers to form redox polymer film on a portion of ES.

DETAILED DESCRIPTION - Modifying an **electrode** surface,

comprises providing an **electrode** surface, providing redox polymers at the **electrode** surface, each redox polymer comprising a complex of a **transition metal** (92), a first **ligand** of the complex, and a second **ligand**, the redox polymer providing sufficient complex centers at a portion of the **electrode** surface for **electrodeposition** of the redox polymers, and **electrodepositing** the redox polymers to form a redox polymer film (94) on at least the portion of the **electrode** surface by application of a potential or a cycle of varied potential, the **electrodepositing** comprising coordinative crosslinking of the first **ligand** of a first redox polymer with the second **ligand** of the first redox polymer or the second **ligand** of the second redox polymer.

USE - The method is useful for modifying **electrode** surface which is useful as an electrochemical biosensors for sensing chemical and biological molecules such as DNA-containing molecules, in chemical and biochemical assays, particularly enzyme-amplified amperometric assays. The biosensor is useful for monitoring, **detecting** or measuring various **analytes** in sample of interest, and for **detecting** presence of oligonucleotide sequence in sample and/or quantifying the sequences.

EXAMPLE - An electron-conducting redox polymer PAA-PVP-Os (7:1 copolymer of acrylamide and 1-vinylimidazole, the imidazole functions complexed with Os(4,4'-dimethyl-bpy2)Cl)(+/2+)), was synthesized by dissolving acrylamide (2.3 g) and 4-vinylpyridine (0.5 ml) in a solution having 1:1 volumetric ratio of acetone and water. The resulting solution was re-aerated by bubbling with argon for 30 minutes. Ammonium persulfate (55 mg) and N,N,N',N'-tetramethyl- ethylenediamine (60 microliters) in water (10 ml) were then added to the solution, which was then degassed for 10 minutes. The solution was then stirred at 40 degrees C for 13 hours, then poured into acetone (800 ml) and stirred. The solvent was evaporated and the residue was added to more acetone (800 ml). The precipitate was collected, washed with acetone, and dried overnight under vacuum at room temperature. The resulting PAA-PVP (120 mg) was then refluxed with Os(bpy)2Cl2 (109 mg) in ethylene glycol (15 ml) for 2 hours. The Os-complexed copolymer, PAA-PVP-Os, was precipitated in ether, re-dissolved in de-ionized water, and purified. The redox polymer film (PAA-PVI-Os) and a single-stranded capture sequence, C1 (TTTTTTTTTTTTTTGGGGGGGGGGGAGCAAAGGTATTAACTTTACTCCC), in a 15:1 weight ratio, were co-**electrodeposited** on 3.6 mm-diameter screen-printed carbon **electrodes** (SPEs), and the resulting films (PAA-PVI-Os-C1) were then hybridized with an enzyme-labeled (horse radish peroxidase (HRP)-labeled) was **detected** at 5 nM, corresponding to 125 femtomoles of D1 (TTTTTTTTTTTTTTGGGAGTAAAGTTAATACCTTTGCTCCCCCCCCCCCC), in a 25 microliters droplet. Upon exposure to hydrogen peroxide, the HRP-labeled D1 was **detected** at 5 nM, corresponding to 125 femtomoles of D1 in the 25 microliters droplet, with a signal to noise ratio of 6. Sandwich-type amperometric assays of oligonucleotides was performed using the above **electrodeposited**, mass-manufacturable carbon **electrodes**. (65 pages)

L21 ANSWER 6 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:202907 HCAPLUS

DOCUMENT NUMBER: 138:201309

TITLE: Bioelectronic sensors and methods of using same in **analyte detection**

INVENTOR(S): Hellinga, Homme W.; Conrad, David W.; Benson, David E.

PATENT ASSIGNEE(S): Duke University, USA

SOURCE: PCT Int. Appl., 38 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003021247	A1	20030313	WO 2002-US27279	20020828
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2457964	AA	20030313	CA 2002-2457964	20020828
US 2003129622	A1	20030710	US 2002-229286	20020828
EP 1421371	A1	20040526	EP 2002-773249	20020828
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
JP 2005502045	T2	20050120	JP 2003-525280	20020828
PRIORITY APPLN. INFO.: US 2001-315036P P 20010828				
WO 2002-US27279 W 20020828				

AB The present invention relates, in general, to biosensors and, in particular, to bioelectronic sensors comprising a macromol. immobilized on an **electrode** surface so that a redox cofactor that is site-specifically attached to the surface of the macromol. is between the macromol. and **electrode** surface **ligand**-mediated conformational changes alter the geometry of interaction between the redox cofactor and the **electrode** surface resulting in a change in electronic coupling between the cofactor and **electrode**.
Diagrams describing the apparatus assembly and operation are given.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 7 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:173913 HCAPLUS

DOCUMENT NUMBER: 138:217799

TITLE: Method and kit for displacement assays that
detect ligate-**ligand** association
 events especially nucleic acid hybridization

INVENTOR(S): Hartwich, Gerhard; Frischmann, Peter; Haker, Ute;
 Wieder, Herbert

PATENT ASSIGNEE(S): Friz Biochem GmbH, Germany

SOURCE: PCT Int. Appl., 57 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003019194	A2	20030306	WO 2002-DE1269	20020406
WO 2003019194	A3	20040129		
W: AU, BR, CA, CN, IL, JP, RU, US, ZA				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
DE 10141691	A1	20030313	DE 2001-10141691	20010825
WO 2003018834	A2	20030306	WO 2002-DE3122	20020826
WO 2003018834	A3	20030912		
W: AU, BR, CA, CN, IL, JP, RU, US, ZA				

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT,
LU, MC, NL, PT, SE, SK, TR

DE 10307402 A1 20040909 DE 2003-10307402 20030220
PRIORITY APPLN. INFO.: DE 2001-10141691 A 20010825
WO 2002-DE1269 W 20020406

AB The invention relates to a method for **detecting** ligate-
ligand association events, comprising the following steps: provision
of a modified surface, whereby the modification consists in the binding of
at least one kind of ligate; provision of signal-**ligands**;
provision of a sample containing **ligands**; bringing a defined amount of
signal-**ligands** into contact with the modified surface and
bringing the sample into contact with the modified surface;
detecting the signal-**ligands**, in addition to comparing the
values obtained from the **detection** of the signal-**ligands**
to the reference values. Thus oligonucleotide ligates were bound to
surface-treated gold **electrodes**; signal nucleotide
ligands were complementary to ligate oligonucleotides; they were
smaller than the ligate nucleotides and were redox-labeled with
ferrocene-carboxylic acid. After reaction of ligate and signal
ligand reference chronocoulometric data were measured. Signal
ligands were either washed away or the ligate-**ligand**
associate was directly reacted with the sample **ligand**; the
hybridization was quantified by applying again the signal **ligands**
and measuring the current that corresponded to the signal **ligands**
that occupied the non-hybridized ligate sites. Alternatively labeled
single stranded DNA binding proteins are used as signal **ligands**.
An other alternative includes the fluorometric **detection** of the
association; in an example ligates were bound to glass fibers and
fluorescent
labeled signal **ligands** were used. The displacement assays are
used in conjunction with low d. DNA and protein chips, e.g. for Point of
Care systems.

L21 ANSWER 8 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:793411 HCAPLUS
DOCUMENT NUMBER: 139:287272
TITLE: Electrochemical **detection** of nucleic acid
hybridization using probe arrays immobilized on
electrodes
INVENTOR(S): Hartwich, Gerhard
PATENT ASSIGNEE(S): Friz Biochem GmbH, Germany
SOURCE: Ger. Offen., 8 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10212958	A1	20031009	DE 2002-10212958	20020322
PRIORITY APPLN. INFO.:			DE 2002-10212958	20020322

AB A procedure for the electrochem. **detection** of nucleic acid
hybridization using microarrays immobilized on **electrode**
surfaces is described. An **electrode**, such as a gold-coated
mica, is used as the surface on which a microarray is immobilized. The
array is then hybridized with an excess of sample nucleic acids and
hybridization is **detected** by measuring changes in redox
potential using an indicator such as a redox dye or a **transition**
metal salt.

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 9 OF 41 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on
STN DUPLICATE 1

ACCESSION NUMBER: 2003:670150 SCISEARCH
THE GENUINE ARTICLE: 707GA
TITLE: Electrochemistry of **transition metal**
complex catalysts. Part 9. One- and two-electron oxidation
of iridium complexes with cyclohexane-derived tripod
phosphine **ligands**
AUTHOR: Buchmann S; Mayer H A; Speiser B (Reprint); Seiler M; Feth
M P; Bertagnolli H; Steinbrecher S; Plies E
CORPORATE SOURCE: Univ Tübingen, Inst Organ Chem, Morgenstelle 18, D-72076
Tübingen, Germany (Reprint); Univ Tübingen, Inst Organ
Chem, D-72076 Tübingen, Germany; Univ Tübingen, Inst
Anorgan Chem, D-72076 Tübingen, Germany; Univ Stuttgart,
Inst Chem Phys, D-70569 Stuttgart, Vaihingen, Germany;
Univ Tübingen, Inst Angew Phys, D-72076 Tübingen, Germany
COUNTRY OF AUTHOR: Germany
SOURCE: ELECTROCHIMICA ACTA, (15 AUG 2003) Vol. 48, No. 19, pp.
2725-2737.
Publisher: PERGAMON-ELSEVIER SCIENCE LTD, THE BOULEVARD,
LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, ENGLAND.
ISSN: 0013-4686.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 17

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The redox chemistry of Ir tripod-type tri-phosphine complexes in
dichloromethane is investigated by cyclic voltammetry, hold-ramp
experiments, and preparative electrolysis at Pt **electrodes**.
Products are identified by spectroscopic data, as well as EDX and EXAFS
results. Complexes with the Ir central atom in the oxidation states +I,
+II and +III are **detected** and several follow-up reactions are
possible from those. Most of the intermediates and products are
characterized. In particular, experiments in the presence of CO contribute
to the assignment of peaks in the cyclic voltammograms. The experimental
results for the individual steps are summarized in a comprehensive redox
reaction mechanism (mesh scheme) for which most steps are characterized by
redox potentials. (C) 2003 Elsevier Science Ltd. All rights reserved.

L21 ANSWER 10 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:634112 HCAPLUS
TITLE: Bio-inspired sensor based on bioinorganic model
complexes and array of carbon nanotube
electrodes
AUTHOR(S): Roy, Sudeshna; Jessica, Koehne; Mascharak, Pradip K.;
Nguyen, Cattien V.; Meyyappan, M.
CORPORATE SOURCE: Center for Nanotechnology, ELORET Corp./NASA Ames
Research Center, Moffett Field, CA, 94035, USA
SOURCE: Abstracts of Papers, 226th ACS National Meeting, New
York, NY, United States, September 7-11, 2003 (2003),
INOR-254. American Chemical Society: Washington, D.
C.
CODEN: 69EKY9
DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English

AB The last few decades have seen tremendous progress in the synthesis of
functional and structural models of inorg. complexes relating to biol.
Numerous models of active sites of metallo-enzymes and metallo-drugs have
been successfully synthesized. In this paper we extend bioinorg. chemical
with nanotechnol. by chemical coupling of the bio-inspired **transition**
-metal model complexes to carbon nanotube based
electrodes. The ultimate goal here is to create a functional
model of metallo-enzymes that have elec. addressable metal active sites.

In preliminary studies, we have used Co based complexes with varying **ligand** compns. for this purpose, as Co is both redox-active and known to bind/activate oxygen, in similar manner to oxygenase family of enzymes. The complexes are tethered to an array of chemical functionalized oxidatively opened carbon nanotubes. Carbon nanotube based **electrodes** are robust, have well-defined geometry and can be fabricated in high yield. These properties have also encouraged us to probe the use of functionalized carbon nanotubes as electrochem. sensors for small mols. like H₂O, O₂, ROOR and NO. This part of the study therefore represents a novel and versatile route to sensitive **detection** of trace amts. of these mols. and shows great promise for expansion to include various other chemical and biochem. moieties.

L21 ANSWER 11 OF 41 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on
STN
DUPLICATE 2

ACCESSION NUMBER: 2002:337524 BIOSIS
DOCUMENT NUMBER: PREV200200337524
TITLE: Monolayer and **electrode** for **detecting** a
label-bearing target and method of use thereof.
AUTHOR(S): Eckhardt, Allen E. [Inventor, Reprint author]; Mikulecky,
Jill C. [Inventor]; Napier, Mary E. [Inventor]; Thomas,
Robert S. [Inventor]; Thorp, H. Holden [Inventor]
CORPORATE SOURCE: Durham, NC, USA
ASSIGNEE: The University of North Carolina at Chapel Hill;
Xantho, Inc.
PATENT INFORMATION: US 6387625 20020514
SOURCE: Official Gazette of the United States Patent and Trademark
Office Patents, (May 14, 2002) Vol. 1258, No. 2.
<http://www.uspto.gov/web/menu/patdata.html>. e-file.
CODEN: OGUPE7. ISSN: 0098-1133.
DOCUMENT TYPE: Patent
LANGUAGE: English
ENTRY DATE: Entered STN: 12 Jun 2002
Last Updated on STN: 12 Jun 2002

AB An **electrode** for **detecting** interactions between
members of a binding pair, which **electrode** has been modified by
formation of a non-conductive self-assembled monolayer, and a method of
detecting biomolecules, such as nucleic acids or other targets,
including receptors, **ligands**, antigens or antibodies, utilizing
such an **electrode**. When contacted with a target nucleic acid,
an oligonucleotide probe coupled to the self-assembled monolayer reacts
with the target nucleic acid form a hybridized nucleic acid on the
modified **electrode** surface. The hybridized nucleic acid is
reacted with a **transition metal** complex capable of
oxidizing a preselected base in the hybridized nucleic acid in an
oxidation-reduction reaction, the oxidation-reduction reaction is
detected, and the presence or absence of the nucleic acid is
determined from the **detected** oxidation-reduction reaction.

L21 ANSWER 12 OF 41 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN

ACCESSION NUMBER: 2003-04971 BIOTECHDS
TITLE: Composition for **detecting** target sequence in
nucleic acid sample, comprises single-stranded nucleic acid
containing electron donor and acceptor moieties covalently
attached to nucleic acid, or to polydentate nucleoside;
DNA probe for mutant DNA **detection** for use in
disease diagnosis
AUTHOR: MEADE T J; WELCH T W
PATENT ASSIGNEE: MOLECULAR DYNAMICS INC
PATENT INFO: US 6444423 3 Sep 2002
APPLICATION INFO: US 1998-191785 13 Nov 1998
PRIORITY INFO: US 1998-191785 13 Nov 1998; US 1995-475051 7 Jun 1995
DOCUMENT TYPE: Patent

LANGUAGE: English
OTHER SOURCE: WPI: 2003-027991 [02]
AB DERWENT ABSTRACT:

NOVELTY - A composition (I) comprising a single-stranded nucleic acid containing at least one electron donor moiety and at least one electron acceptor moiety, where the electron donor moiety and the electron acceptor moiety are covalently attached to nucleic acid, or to at least one of the electron donor and electron acceptor moiety attached to a polydentate nucleoside, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following: (1) a nucleoside (phosphoramidite) (II) containing a covalently attached polydentate **ligand**, the **ligand** attached at the 2' or 3' position of the nucleoside; and (2) making (M) a nucleic acid with an electron transfer moiety via a polydentate **ligand**, involves forming a nucleic acid from phosphoramidite nucleosides, at least one which comprises a polydentate **ligand** attached to the ribose of the nucleoside.

WIDER DISCLOSURE - Also disclosed are oligonucleotides comprising at least one nucleoside, covalently attached to a solid support.

BIOTECHNOLOGY - Preferred Composition: In (I), the other electron donor and the acceptor moieties is an **electrode**, or one electron donor and electron acceptor moiety is an organic electron donor or acceptor. Preferred Nucleoside: (II) further comprises a **transition metal** chelated to the polydentate nucleoside. Preferred Method: The polydentate **ligand** further comprises a bound **transition metal**.

USE - (I) is useful for **detecting** a target sequence in a nucleic acid sample, by applying a first input signal to a hybridization complex comprising the target sequence, which if present, is hybridized to at least one single stranded nucleic acid, where the hybridization complex has a covalently attached electron donor and acceptor moiety, where at least one of the electron donor acceptor moieties are attached to a polydentate nucleoside, and **detecting** electron transfer between the electron donor and acceptor moieties in the hybridization complex as an indicator of the presence or absence of the target sequence. The single stranded nucleic acid comprises the electron donor moiety and the electron acceptor moiety, and the target sequence comprises the electron donor moiety. Both of the electron donor and acceptor moieties are attached by polydentate nucleosides (claimed). (I) is useful to **detect** mismatches in a complementary target sequence. The single stranded nucleic acids are useful as a labeled gene probe in molecular biology and in diagnostic medicine and also in automated gene probe assays and in field testing.

EXAMPLE - Synthesis of a polydentate nucleoside was as follows: 2'-aminouridine (10 mmol) and pyridine-2-carboxyaldehyde (11 mmol) were heated to reflux in absolute ethanol until thin layer chromatography (TLC) showed complete conversion of aminouridine to the less-polar product. The solvent was evaporated, the residue dissolved in methanol, and 11 mmol sodium borohydride added with vigorous stirring. When hydrogen evolution subsided, the mixture was heated to reflux for 2 hour and the solvent was evaporated. The residue was dissolved in water and purified by cation-exchange chromatography on Dowex AG-50 using 2 M ammonia as eluent. (40 pages)

L21 ANSWER 13 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:850210 HCAPLUS

DOCUMENT NUMBER: 137:347495

TITLE: Electro-optical device and methods for hybridization electrochemiluminescence **detection** using probes labeled with **transition metal** -**ligand** complex

INVENTOR(S): Mauze, Ganapati R.; Yang, Dan-hui

PATENT ASSIGNEE(S): USA

SOURCE: U.S. Pat. Appl. Publ., 13 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002164599	A1	20021107	US 2001-848869	20010504
US 2004018612	A1	20040129	US 2003-414719	20030415
US 2004171057	A1	20040902	US 2004-798982	20040311
US 2005003429	A1	20050106	US 2004-892928	20040716

PRIORITY APPLN. INFO.: US 2001-848869 A3 20010504

AB The invention provides an apparatus and method for **detection** of a target mol. The apparatus includes a probe labeled with a **transition metal-ligand** complex that hybridizes with the target to form an initial complex, a metal ion for doping the initial complex and forming a final complex, and a potential means for providing a potential to the final complex to produce a **detectable** signal indicating the presence of the target after redox reaction. The method of the invention teaches the steps of hybridizing a probe with an attached label to the target to produce an initial complex, adding a metal ion to the initial complex to form a final complex and applying a potential to the final complex to produce a measurable signal.

L21 ANSWER 14 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:114029 HCAPLUS

DOCUMENT NUMBER: 136:147491

TITLE: **Detection** of binding reactions using labels
detected by mediated catalytic
 electrochemistry

INVENTOR(S): Stewart, David H.; Groelke, John W.; Thorp, H. Holden;
 Eckhardt, Allen E.

PATENT ASSIGNEE(S): Xanthon, Inc., USA; The University of North Carolina
 At Chapel Hill

SOURCE: U.S., 25 pp., Cont.-in-part of U.S. Ser. No. 603,217.
 CODEN: USXXAM

DOCUMENT TYPE: Patent
 LANGUAGE: English

FAMILY ACC. NUM. COUNT: 7

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6346387	B1	20020212	US 2000-722065	20001124
US 5871918	A	19990216	US 1996-667338	19960620
EP 1193315	A1	20020403	EP 2001-130632	19960624
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
US 6132971	A	20001017	US 1998-179665	19981027
US 6180346	B1	20010130	US 1999-267552	19990312
US 6361951	B1	20020326	US 2000-603217	20000626
AU 753350	B2	20021017	AU 2000-53462	20000817
WO 2002042771	A2	20020530	WO 2001-US21571	20010709
WO 2002042771	A3	20020912		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
 CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
 GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
 LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT,
 RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US,
 UZ, VN, YU, ZA, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AM, AZ, BY, KG,

KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR,
 IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN,
 GW, ML, MR, NE, SN, TD, TG

AU 2001071919	A5	20020603	AU 2001-71919	20010709
US 2002106683	A1	20020808	US 2001-8233	20011106
US 2002037530	A1	20020328	US 2001-991015	20011116
JP 2004117371	A2	20040415	JP 2003-375926	20031105
US 2004241738	A1	20041202	US 2004-884299	20040702
JP 2004357714	A2	20041224	JP 2004-213311	20040721

PRIORITY APPLN. INFO.:

US 1995-495817	B2	19950627
US 1995-60949P	P	19950627
US 1995-60949P	P	19950627
US 1996-667338	A3	19960620
US 1998-179665	A3	19981027
US 1999-267552	A2	19990312
US 2000-603217	A2	20000626
US 1996-16265P	P	19960419
US 1996-667337	A2	19960620
EP 1996-922533	A3	19960624
JP 1997-504485	A3	19960624
US 1997-950503	A2	19971014
US 2000-722065	A	20001124
WO 2001-US21571	W	20010709
US 2001-991015	A1	20011116

AB The invention concerns a method of **detecting** binding interactions and target mols., such as proteins, protein fragments, recombinant proteins, recombinant protein fragments, extracellular matrix proteins, **ligands**, carbohydrates, steroids, hormones, drugs, drug candidates, Igs and receptors of eukaryotic, prokaryotic or viral origin, by mediated electrochem. using labels that react with **transition metal** mediator complexes in a **detectable** catalytic redox reaction. These labels are attached directly to binders, target mols., surrogate target mols., or to affinity **ligands** capable of binding to the target or to surrogate target mols. capable of competing with the target for binding to another binder. The labels can be naturally present (endogenous) in the binder, target or affinity **ligand**, or constructed by the covalent attachment of the label to the binder, target, affinity **ligand** or surrogate target (exogenous).

REFERENCE COUNT: 117 THERE ARE 117 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 15 OF 41 MEDLINE on STN

ACCESSION NUMBER: 2002671065 MEDLINE

DOCUMENT NUMBER: PubMed ID: 12432535

TITLE: Simultaneous determination of inorganic and organic anions, alkali, alkaline earth and **transition metal** cations by capillary electrophoresis with contactless conductometric **detection**.

AUTHOR: Kuban Pavel; Kuban Petr; Kuban Vlastimil

CORPORATE SOURCE: Department of Chemistry and Biochemistry, Mendel University of Agriculture and Forestry, Brno, Czech Republic.

SOURCE: Electrophoresis, (2002 Nov) 23 (21) 3725-34.

Journal code: 8204476. ISSN: 0173-0835.

PUB. COUNTRY: Germany: Germany, Federal Republic of

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 200307

ENTRY DATE: Entered STN: 20021115

Last Updated on STN: 20030713

Entered Medline: 20030711

AB Simultaneous separation of up to 22 inorganic and organic anions, alkali, alkaline earth and **transition metal** cations was achieved in less than 3 min in the capillary electrophoresis system with contactless conductometric **detector**. The sample was injected from both capillary ends (dual opposite end injection) and anionic and cationic species were **detected** in the center of the separation capillary. The parameters of the separation electrolyte, such as pH, concentration of the electrolyte, concentration of complexing agents and concentration of 18-crown-6 were studied. Best results were achieved with electrolytes consisting of 8 mM L-histidine, 2.8 mM 2-hydroxyisobutyric acid, 0.32 mM 18-crown-6 at pH 4.25 or 9 mM L-histidine, 4.6 mM lactic acid, 0.38 mM 18-crown-6 at pH 4.25. Other electrolytes containing complexing agents such as malic or tartaric acid at various concentrations could also be used. The **detection** limits achieved for most cations and anions were 7.5 - 62 micro gL(-1) except for Ba2+ (90 micro gL(-1)), Cd 2+, Cr 3+ and F- (125 micro gL(-1)), and fumarate (250 micro gL(-1)). The repeatability of migration times and peak areas was better than 0.4% and 5.9%, respectively. The developed method was applied for analysis of real samples, such as tap, rain, drainage and surface water samples, plant exudates, plant extracts and ore leachates.

L21 ANSWER 16 OF 41 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN

ACCESSION NUMBER: 2002:964456 SCISEARCH

THE GENUINE ARTICLE: 618VB

TITLE: Polymeric membrane ion-selective **electrodes** based on molecular asterisk ionophores

AUTHOR: Johnson R D; Pinchart A; Badr I H A; Gingras M; Bachas L G (Reprint)

CORPORATE SOURCE: Univ Kentucky, Dept Chem, Lexington, KY 40506 USA (Reprint); Free Univ Brussels, Fac Sci, Div Organ Chem, B-1050 Brussels, Belgium; Univ Paris 11, Chim Inorgan Lab, CNRS, UMR 8613, F-91405 Orsay, France; Univ Nice Sophia Antipolis, Fac Sci, Dept Chem, Chem Lab Organ & Met Mat, F-06108 Nice 2, France

COUNTRY OF AUTHOR: USA; Belgium; France

SOURCE: ELECTROANALYSIS, (NOV 2002) Vol. 14, No. 19-20, pp. 1419-1425.

Publisher: WILEY-V C H VERLAG GMBH, PO BOX 10 11 61, D-69451 WEINHEIM, GERMANY.

ISSN: 1040-0397.

DOCUMENT TYPE: Article; Journal

LANGUAGE: English

REFERENCE COUNT: 36

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Ion-selective **electrodes** (ISEs) have been developed that incorporate a novel supramolecular class of ionophores called molecular asterisks. These ionophores are constructed with "arms" of repeating phenylene sulfide units that radiate outward from a core of either benzene or coronene. The flexibility of the arms, as well as the open exterior geometry and multiple soft Lewis base functionalities make these molecules potential candidates as ionophores for ISEs particularly for soft Lewis acids like **transition metals**. Studies with molecular asterisk-based ISEs show that these ionophores display a high selectivity relative to ion-exchanging ionophores toward Ag+ over a number of other cations. According to theoretical prediction, these ISEs demonstrate a super-Nernstian region of response toward silver from 10(-6) to 10(-6) M with a Nernstian response above 10(-5) M, when primary ion is absent from the internal filling solution. Additionally, it was determined that both the nature of the core entity and the length (or generation) of the arms play a role in governing selectivity of these ionophores.

L21 ANSWER 17 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:435309 HCAPLUS
 DOCUMENT NUMBER: 135:43123
 TITLE: Methods and compositions relating to electrical
detection of nucleic acid hybridization or
 peptide binding preferably using AC impedance
 INVENTOR(S): Choong, Vi-en; Gallagher, Sean; Gaskin, Mike; Li,
 Changming; Maracas, George; Shi, Song
 PATENT ASSIGNEE(S): Motorola, Inc., USA
 SOURCE: PCT Int. Appl., 63 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001042508	A2	20010614	WO 2000-US33497	20001211
WO 2001042508	A3	20020314		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 2002051975	A1	20020502	US 1999-458533	19991209
US 2002064775	A1	20020530	US 1999-459685	19991213
US 6518024	B2	20030211		
CA 2393733	AA	20010614	CA 2000-2393733	20001211
EP 1238114	A2	20020911	EP 2000-993326	20001211
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2003516165	T2	20030513	JP 2001-544379	20001211
US 2003096283	A1	20030522	US 2002-259532	20020927
US 2003209432	A1	20031113	US 2003-149319	20030228
PRIORITY APPLN. INFO.:			US 1999-458501	A 19991209
			US 1999-458533	A 19991209
			US 1999-459685	A 19991213
			WO 2000-US33497	W 20001211

AB This invention relates to the elec. **detection** of mol.
 interactions between biol. mols. The method generally rely on the mol.
 interactions such as nucleic acid hybridization or protein-protein (for
 example, antigen-antibody) binding reactions done on solid supports using
 arrays of peptides or oligonucleotides for capture binding **ligands**
 . As a result of these interactions, some electronic property of the
 system changes, and **detection** is achieved. In a preferred
 embodiment, the methods of the invention utilize AC impedance for the
detection. In some embodiments, no electrochem. or other label
 moieties are used. In others, electrochem. active (ECA) labels are used
 to **detect** reactions on hydrogel arrays, including genotyping
 reactions such as the single base extension reaction.

L21 ANSWER 18 OF 41 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN

ACCESSION NUMBER: 2001:895679 SCISEARCH
 THE GENUINE ARTICLE: 489LH
 TITLE: Luminol chemiluminescence in unbuffered solutions with a
 cobalt(II)-ethanolamine complex immobilized on resin as
 catalyst and its application to analysis
 AUTHOR: Lin J M (Reprint); Shan X Q; Hanaoka S; Yamada M

CORPORATE SOURCE: Chinese Acad Sci, Ecoenvironm Sci Res Ctr, POB 2871, Beijing 100085, Peoples R China (Reprint); Chinese Acad Sci, Ecoenvironm Sci Res Ctr, Beijing 100085, Peoples R China; Tokyo Metropolitan Univ, Grad Sch Engr, Dept Appl Chem, Tokyo 1920397, Japan

COUNTRY OF AUTHOR: Peoples R China; Japan

SOURCE: ANALYTICAL CHEMISTRY, (1 NOV 2001) Vol. 73, No. 21, pp. 5043-5051.
Publisher: AMER CHEMICAL SOC, 1155 16TH ST, NW, WASHINGTON, DC 20036 USA.
ISSN: 0003-2700.

DOCUMENT TYPE: Article; Journal

LANGUAGE: English

REFERENCE COUNT: 49

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Using a heterogeneous catalyst, Co(II)-ethanolamine complex sorbed on Dowex-50W resin, the chemiluminescence (CL) of luminol in unbuffered or weakly acidic solution was studied in the presence of H₂O₂. The maximum luminol CL wavelength at pH 5.7 was 448 nm, 23 nm longer than that in a basic solution (pH 10.5). Three different **ligands**, mono-, di-, and triethanolamine, and six **transition metal** ions, Co(II), Cu(II), Ni(II), Mn(II), Fe(II), and Fe(III) were compared by CL measurements. The CL intensity decreased in the order mono- > di- > triethanolamine and Co(II) > Cu(II) > Ni(II) > Fe(III) > Mn(II) > Fe(II). This heterogeneous CL system was developed as H₂O₂ and glucose flow-through sensors. **Detection** limits (S/N = 3) of H₂O₂ and glucose using Dowex-50W-X4-Co(II)-monoethanolamine as catalyst are 1 x 10⁻⁷ M and 1 x 10⁻⁶ M, respectively. On the basis of the studies of the CL, fluorescence, UV-vis and ESCA spectra and the effect of dissolved oxygen in luminol solution, a mechanism for CL emission in unbuffered solution was considered as the formation of a superoxide radical ion during the decomposition of H₂O₂ catalyzed by the Co(II)-ethanolamine immobilized resin. Then the superoxide radical ion acted on luminol and the CL was emitted. The applications of the proposed method to determine H₂O₂ in rainwater without any special pretreatment and glucose in human urine and orange juice samples give satisfactory results.

L21 ANSWER 19 OF 41 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN DUPLICATE 3

ACCESSION NUMBER: 2001:710445 SCISEARCH

THE GENUINE ARTICLE: 468KA

TITLE: Electrochemical and DNA-binding properties of dipyridophenazine complexes of osmium(II)

AUTHOR: Maruyama K (Reprint); Mishima Y; Minagawa K; Motonaka J

CORPORATE SOURCE: Univ Tokushima, Fac Engr, Dept Chem Sci & Technol, Minami Josanjima 2-1, Tokushima 7708506, Japan (Reprint); Univ Tokushima, Fac Engr, Dept Chem Sci & Technol, Tokushima 7708506, Japan; Univ Tokushima, Fac Pharmaceut Sci, Tokushima 7708506, Japan

COUNTRY OF AUTHOR: Japan

SOURCE: JOURNAL OF ELECTROANALYTICAL CHEMISTRY, (7 SEP 2001) Vol. 510, No. 1-2, pp. 96-102.
Publisher: ELSEVIER SCIENCE SA, PO BOX 564, 1001 LAUSANNE, SWITZERLAND.
ISSN: 0022-0728.

DOCUMENT TYPE: Article; Journal

LANGUAGE: English

REFERENCE COUNT: 29

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB A **transition metal** complex as an electrochemical probe of a DNA sensor must have an applicable redox potential, high binding affinity and chemical stability. Some complexes with the dipyrido[3,2-a:2',3'-c]phenazine (DPPZ) **ligand** have been

reported to have high binding affinity for DNA. However, it was difficult to **detect** the targeted DNA electrochemically using these complexes because of the relatively high redox potential. In this work, a combination of bipyridine **ligands** with functional groups (-NH₂, -CH₃ and -COOH) and the DPPZ **ligand** were studied. The introduction of electron-donating groups was effective for controlling the redox potential of the DPPZ-type osmium complex. The [Os(DA-bpy)(2)DPPZ](2+) complex (DA-bpy; 4,4'-diamino-2,2'-bipyridine) had a lower half-wave potential (E₁, E₂) of 147 mV (vs. Ag/AgCl) and higher binding affinity with DNA {binding constant; K = 3.1 x 10⁽⁷⁾ M⁻¹ in 10 mmol dm⁽⁻³⁾ Tris-HCl buffer with 50 mmol dm⁽⁻³⁾ NaCl (pH 7.76)} than those of other complexes. With the single stranded DNA (ssDNA) modified gold **electrode**, the hybridization signal (ΔI) of the [Os(DA-bpy)(2)DPPZ](2+) complex was linear in the concentration range of 1.0 pg ml⁽⁻¹⁾-0.12 μg ml⁽⁻¹⁾ for the targeted DNA with a regression coefficient of 0.999. The **detection** limit was 0.1 pg ml⁽⁻¹⁾. (C)
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L21 ANSWER 20 OF 41 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN DUPLICATE 4

ACCESSION NUMBER: 2001:230925 BIOSIS
DOCUMENT NUMBER: PREV200100230925
TITLE: Monolayer and **electrode** for **detecting** a label-bearing target and method of use thereof.
AUTHOR(S): Eckhardt, Allen E. [Inventor, Reprint author]; Mikulecky, Jill C. [Inventor]; Napier, Mary E. [Inventor]; Thomas, Robert S. [Inventor]; Thorp, H. Holden [Inventor]
CORPORATE SOURCE: Durham, NC, USA
ASSIGNEE: The University of North Carolina at Chapel Hill; Xantho, Inc., Research Triangle Park, NC, USA
PATENT INFORMATION: US 6127127 20001003
SOURCE: Official Gazette of the United States Patent and Trademark Office Patents, (Oct. 3, 2000) Vol. 1239, No. 1. e-file. CODEN: OGUPE7. ISSN: 0098-1133.
DOCUMENT TYPE: Patent
LANGUAGE: English
ENTRY DATE: Entered STN: 16 May 2001
Last Updated on STN: 18 Feb 2002

AB An **electrode** for **detecting** interactions between members of a binding pair, which **electrode** has been modified by formation of a non-conductive self-assembled monolayer, and a method of **detecting** biomolecules, such as nucleic acids or other targets, including receptors, **ligands**, antigens or antibodies, utilizing such an **electrode**. When contacted with a target nucleic acid, an oligonucleotide probe coupled to the self-assembled monolayer reacts with the target nucleic acid to form a hybridized nucleic acid on the modified **electrode** surface. The hybridized nucleic acid is reacted with a **transition metal** complex capable of oxidizing a preselected base in the hybridized nucleic acid in an oxidation-reduction reaction, the oxidation-reduction reaction is **detected**, and the presence or absence of the nucleic acid is determined from the **detected** oxidation-reduction reaction.

L21 ANSWER 21 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1999:796039 HCAPLUS
DOCUMENT NUMBER: 132:32898
TITLE: Electrochemical probes for **detection** of molecular interactions and drug discovery
INVENTOR(S): Welch, Thomas W.
PATENT ASSIGNEE(S): Xantho, Inc., USA
SOURCE: PCT Int. Appl., 104 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent

LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9964847	A1	19991216	WO 1999-US11848	19990528
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9943185	A1	19991230	AU 1999-43185	19990528
PRIORITY APPLN. INFO.:			US 1998-93444	A 19980608
			WO 1999-US11848	W 19990528

AB This invention relates to methods and apparatus for performing electrochem. analyses. The invention provides an electrochem. apparatus for performing amperometric, coulometric and potentiometric or voltammetric analyses for **detecting** specific binding between members of a biol. binding pair wherein one member is electrochem. labeled or linked to an electrochem. catalyst. Methods for using the apparatus of the invention for performing binding and competition binding assays are provided. The invention also provides methods for performing high throughput screening assays for **detecting** inhibition of specific binding between the members of the biol. binding pair for use in drug development, biochem. anal. and protein purification assays.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 22 OF 41 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN DUPLICATE 5

ACCESSION NUMBER: 2000:99192 BIOSIS
DOCUMENT NUMBER: PREV200000099192
TITLE: **Detection** of interaction between metal complex indicator and DNA by using electrochemical biosensor.
AUTHOR(S): Erdem, Arzum; Meric, Burcu; Kerman, Kagan; Dalbasti, Tayfun; Ozsoz, Mehmet [Reprint author]
CORPORATE SOURCE: Faculty of Pharmacy, Analytical Chemistry Department, Ege University, 35100, Bornova-Izmir, Turkey
SOURCE: Electroanalysis, (Dec., 1999) Vol. 11, No. 18, pp. 1372-1376. print.
CODEN: ELANEU. ISSN: 1040-0397.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 15 Mar 2000
Last Updated on STN: 3 Jan 2002

AB There has been extensive research on binding of **transition metal** complexes to DNA via electrostatic and hydrophobic interactions. Most indicator based electrochemical DNA biosensors have used cationic metal complexes that interact in a different way with single-stranded DNA (ssDNA) and double-stranded DNA (dsDNA). Described here are the electrochemical parameters for a mixed-ligand complex, (Co(phen)33+) (phen: 1,10-phenanthroline), on binding to DNA. The milimolar quantities of (Co(phen)33+), which associates reversibly with immobilized calf thymus DNA was **detected** by using dsDNA-modified carbon paste **electrode** (dsDNA-modified CPE), ssDNA-modified carbon paste **electrode** (ssDNA-modified CPE) and bare carbon paste **electrode** (bare CPE), voltammetrically and the decreased peak currents were observed, respectively. The extend of

hybridization between the complementary sequences is determined by the enhancement of the voltammetric peak of the (Co(phen)₃)³⁺ indicator. Numerous factors affecting the DNA immobilization and indicator were investigated. Experiments were also performed at various salt concentrations and the optimum salt concentration was determined. The difference between the peak currents of denaturated calf thymus DNA (ssDNA)-modified CPE and dsDNA-modified CPE was also observed. These results demonstrated the use of the electroactive hybridization indicator, (Co(phen)₃)³⁺ for DNA biosensors.

L21 ANSWER 23 OF 41 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN

ACCESSION NUMBER: 97:534570 SCISEARCH

THE GENUINE ARTICLE: XK011

TITLE: **Detecting a transition-metal ammine at tailored surfaces**

AUTHOR: Iqbal S; Kremer F J B; Preece J A (Reprint); Ringsdorf H; Steinbeck M; Stoddart J F; Shen J; Tinker N D

CORPORATE SOURCE: UNIV BIRMINGHAM, SCH CHEM, POB 363, BIRMINGHAM B15 2TT, W MIDLANDS, ENGLAND (Reprint); UNIV BIRMINGHAM, SCH CHEM, BIRMINGHAM B15 2TT, W MIDLANDS, ENGLAND; UNIV MAINZ, INST ORGAN CHEM, D-55099 MAINZ, GERMANY; DE MONTFORT UNIV, DEPT APPL PHYS, LEICESTER LE1 9BH, LEICS, ENGLAND; BNFL, SPRINGFIELDS WORKS, PRESTON PR4 0XJ, LANCS, ENGLAND

COUNTRY OF AUTHOR: ENGLAND; GERMANY

SOURCE: JOURNAL OF MATERIALS CHEMISTRY, (JUL 1997) Vol. 7, No. 7, pp. 1147-1154.

Publisher: ROYAL SOC CHEMISTRY, THOMAS GRAHAM HOUSE, SCIENCE PARK, MILTON ROAD, CAMBRIDGE, CAMBS, ENGLAND CB4 4WF.

ISSN: 0959-9428.

DOCUMENT TYPE: Article; Journal

FILE SEGMENT: PHYS; ENGI

LANGUAGE: English

REFERENCE COUNT: 92

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The fabrication of surfaces by forming Langmuir films, which incorporate amphiphiles containing hydrophilic 18-crown-6(18C6) derivatives, at a gas/water interface is described. These Langmuir films can be transferred to a hydrophobised quartz crystal microbalance (QCM), using the Langmuir-Blodgett technique. The QCM response has been measured in aqueous solution as a function of the concentration of the **transition metal** complex [Co(NH₃)(6)]Cl-3 which was injected into a vial in which the film-coated QCM had been immersed. By comparing various surfaces covered with hydrophilic polyether and hydroxy functions and hydrophobic methyl groups, and by varying the composition of the films so as to increase the separation between the 18C6 macrocycles, it has been demonstrated that surfaces can be tailored that will enhance the binding of the [Co(NH₃)(6)]³⁺ trications.

L21 ANSWER 24 OF 41 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN DUPLICATE 6

ACCESSION NUMBER: 97:250736 SCISEARCH

THE GENUINE ARTICLE: WP036

TITLE: Flow-injection potentiometric **detection** of metal ions based on tungsten oxide **electrode**

AUTHOR: Chen Z L (Reprint); Alexander P W

CORPORATE SOURCE: UNIV NEW S WALES, DEPT ANALYT CHEM, SYDNEY, NSW 2052, AUSTRALIA (Reprint); UNIV TASMANIA, DEPT PHYS SCI, LAUNCESTON, TAS 7250, AUSTRALIA

COUNTRY OF AUTHOR: AUSTRALIA

SOURCE: ELECTROANALYSIS, (FEB 1997) Vol. 9, No. 2, pp. 141-144.

Publisher: VCH PUBLISHERS INC, 303 NW 12TH AVE, DEERFIELD

BEACH, FL 33442-1788.

ISSN: 1040-0397.

DOCUMENT TYPE: Article; Journal

FILE SEGMENT: PHYS

LANGUAGE: English

REFERENCE COUNT: 20

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The use of a tungsten oxide **electrode** for potentiometric flow-injection analysis of **transition metal** ions is described. The effect of a variety of experimental conditions, including the carrier pH, the types of **ligands** and their concentrations, was studied. It was found that the best sensitivity for the ions tested was obtained using EDTA as a **ligand**. The **electrode** exhibited a linear response for Fe³⁺, Cu²⁺, Pb²⁺ and Ca²⁺ in the range of 2.5 x 10⁽⁻⁴⁾ M to 2 x 10⁽⁻³⁾ M using with 1 x 10⁽⁻³⁾ M EDTA at pH 5.0 as carrier. The **detection** limits were found to be between 1 x 10⁽⁻⁵⁾ to 5 x 10⁽⁻⁵⁾ M. Reproducibility for Fe³⁺ was about 1.7% with a stable baseline potential.

L21 ANSWER 25 OF 41 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN

ACCESSION NUMBER: 96:394368 SCISEARCH

THE GENUINE ARTICLE: UL305

TITLE: ELECTROCHEMICAL RECOGNITION OF CHLORIDE-IONS BY A POLY [TRIS-(2,2'-BIPYRIDINE)RUTHENIUM(II)] MODIFIED **ELECTRODE**

AUTHOR: LOPEZ C; MOUTET J C (Reprint); SAINTAMAN E

CORPORATE SOURCE: UNIV GRENOBLE 1, LAB ELECTROCHIM ORGAN & PHOTOCHEM REDOX, CNRS, UMR 5630, BP 53, F-38041 GRENOBLE 9, FRANCE (Reprint); UNIV GRENOBLE 1, LAB ELECTROCHIM ORGAN & PHOTOCHEM REDOX, CNRS, UMR 5630, F-38041 GRENOBLE 9, FRANCE

COUNTRY OF AUTHOR: FRANCE

SOURCE: JOURNAL OF THE CHEMICAL SOCIETY-FARADAY TRANSACTIONS, (07 MAY 1996) Vol. 92, No. 9, pp. 1527-1532.

ISSN: 0956-5000.

DOCUMENT TYPE: Article; Journal

FILE SEGMENT: PHYS

LANGUAGE: ENGLISH

REFERENCE COUNT: 20

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The electrochemical behaviour of tris-substituted bipyridineruthenium(II) complexes containing a 4,4'-amide-disubstituted bipyridine **ligand** has been studied in the presence and the absence of halide anions. Voltammetric studies and UV-VIS spectrophotometric measurements confirm the selective binding ability of this redox-active receptor molecule towards Cl⁻ among the halide anions. Platinum **electrodes** have been modified by electropolymerization of the parent pyrrole-substituted complex. A shift in potential of the first one-electron reduction of the redox-active polymer film in the presence of Cl⁻ has been found. In contrast, no **detectable** influence of I⁻ or Br⁻ could be observed, while the electroactivity of the film is fully transformed in the presence of F⁻.

L21 ANSWER 26 OF 41 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN DUPLICATE 7

ACCESSION NUMBER: 97:235323 SCISEARCH

THE GENUINE ARTICLE: WN851

TITLE: Organometallic and coordination chemistry on phosphazenes .3. Synthesis, characterization, and electrochemical behavior of **transition metal**

-cinnamotrile cyclophosphazene derivatives

AUTHOR: Gleria M (Reprint); Bertani R; Facchin G; Noe F; Michelin

R A; Mozzon M; Pombeiro A J L; daSilva M F C G; Machado I L F

CORPORATE SOURCE: CNR, IST FOTOCHIM & RADIAZ ALTA ENERGIA, SEZ LEGNARO, VIA ROMEA 4, I-35020 PADUA, ITALY (Reprint); UNIV PADUA, CNR, CTR CHIM & TECNOL COMPOSTI MET ORGAN ELEMENTI TRA, I-35131 PADUA, ITALY; UNIV PADUA, IST CHIM IND, I-35131 PADUA, ITALY; INST SUPER TECN, CTR QUIM ESTRUTURAL, P-1096 LISBON, PORTUGAL

COUNTRY OF AUTHOR: ITALY; PORTUGAL

SOURCE: JOURNAL OF INORGANIC AND ORGANOMETALLIC POLYMERS, (SEP 1996) Vol. 6, No. 3, pp. 145-170.
 Publisher: PLENUM PUBL CORP, 233 SPRING ST, NEW YORK, NY 10013.
 ISSN: 1053-0495.

DOCUMENT TYPE: Article; Journal

FILE SEGMENT: PHYS

LANGUAGE: English

REFERENCE COUNT: 42

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Hexakis(4-formylphenoxy)cyclophosphazene (1) reacts with six equivalents of cyanomethylenetriphenylphosphorane to give hexakis(4-cinnamionitrile)cyclotriphosphazene bearing 12 functional groups (six nitriles and six olefins) able to coordinate up to 12 metals. In this way a series of polynuclear phosphazene metal derivatives (8-12) was prepared with different **transition metals** and in different oxidation states, Pt(0), Pt(II), and Rh(I). The analogous cinnamionitrile derivatives (3-7) were prepared and used as models for the characterization of corresponding phosphazene compounds. The redox properties of the complexes 3-5 and 8-10 as well as of the Free cinnamionitrile 2 and the free substituted cyclophosphazene 1 have been investigated by cyclic voltammetry (CV) and controlled potential electrolysis (CPE) in aprotic media (THF, CH₂Cl₂, or NCMe/0.2 M [NBu(4)][BF₄]), at Pt **electrodes**. Cathodic processes have been **detected** only when the unsaturated C=C bond of the cinnamionitrile group is uncoordinated; hence, for compounds 1, 4, and 9, they are irreversible, occur at potentials E(p)(red) ca. -1.3 to ca. -1.9 V vs SCE, which are less cathodic than that exhibited by the tier cinnamionitrile (2; E(p)(red) ca. -2.0 V vs SCE), and are believed to be centered at the electron-acceptor empty pi* (C=C) orbital of each of the cinnamionitrile groups present in the molecule. Anodic processes are displayed only by complexes 3, 5, 8 and 10 with at least one Pt(0) site; they are irreversible, conceivable centered at such a metal center, and occur at potentials (E(p)(ox) ca. -1.2 V vs SCE) which are dependent on the electronic effects of the **ligands**, in particular the strong electron-withdrawing ability of the cyclophosphazene group. Complex 10 undergoes dissociation in NCMe to form 9 and possibly solvated [Pt(PPh(3))(2)] species which adsorb at the **electrode** surface. No evidence for any redox process centered at the phosphazene ring has been found.

L21 ANSWER 27 OF 41 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN DUPLICATE 8

ACCESSION NUMBER: 95:797409 SCISEARCH

THE GENUINE ARTICLE: TE626

TITLE: ELECTROCHEMICAL STUDY OF SOME CHLORO COMPLEXES OF TITANIUM, MOLYBDENUM, IRON, ALUMINUM OR TIN IN HIGH OXIDATION-STATES

AUTHOR: RIBEIRO L M D (Reprint); LEMOS M A N D A; POMBEIRO A J L; SOBOTA P

CORPORATE SOURCE: INST SUPER TECN, CTR QUIM ESTRUTURAL, COMPLEXO I, AV ROVISCO PAIS, P-1096 LISBON, PORTUGAL (Reprint); UNIV WROCLAW, INST CHEM, PL-50383 WROCLAW, POLAND

COUNTRY OF AUTHOR: PORTUGAL; POLAND

SOURCE: RUSSIAN JOURNAL OF ELECTROCHEMISTRY, (OCT 1995) Vol. 31,
No. 10, pp. 1009-1015.
ISSN: 1023-1935.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS
LANGUAGE: ENGLISH
REFERENCE COUNT: 18

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The electrochemical behavior of some bimetallic complexes, commonly with a transition (M = Ti, Mo or Fe) and a non-**transition metal** (Mg, Al or Sn), in high oxidation states, in particular [TiCl₄(μ t-Cl)(2)Mg(thf)(4)] (thf = tetrahydrofuran), [Mg(thf)(6)][TiC₅(thf)](2), [Mg-2(μ-Cl)(3)(thf)(6)][TiCl₅(thf)], [TiCl₂(thf)(4)][SnCl₅(thf)], [Mg(thf)(6)][MoOCl₄(thf)](2), [Mg-2(μ-Cl)(3)(thf)(6)][MoOCl₄(thf)], [MgCl(thf)(5)][FeCl₄] or [MgCl(thf)(5)][AlCl₄], as well as of the related species [Bu(4)N](2)[TiCl₆] and [Bu(4)N][AlCl₄], has been investigated in aprotic media by cyclic voltammetry (CV) and controlled potential electrolysis (CPE) at Pt **electrodes**. The complexes exhibit, by CV, one quasi-reversible cathodic wave (with the exception of the Fe compound for which this wave presents a reversible character) which, by CPE, usually involves one electron per **transition metal** atom or per aluminium atom. Their reduction potential [ca. -0.5 to -1.0 V vs. SCE (M = Ti), ca. -0.9 V (M = Mo) or ca. -0.1 V (M = Fe)] is discussed in terms of charge, metal oxidation state, and **ligand** effects. A partial chloride **ligand** dissociation, which is promoted by cathodic reduction, has been **detected** by CV for the Ti complexes. Some of the cathodic processes were also studied by digital simulation of the cyclic voltammograms, which allowed to investigate their electrochemical and/or chemical irreversibility and to estimate relevant kinetic parameters, and suggested the possibility of occurrence of cathodically induced trimerization of titanium species. The application of one of the titanium complexes to the electroactivation of small unsaturated molecules, such as olefins, was also successfully tested.

L21 ANSWER 28 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1995:736109 HCAPLUS

DOCUMENT NUMBER: 123:357670

TITLE: Polymer modified **electrodes** for metal ion sensors

AUTHOR(S): Guadalupe, Ana R.; Martinez, Fernando; Murray, Marisol

CORPORATE SOURCE: Dep. Chem., Univ. Puerto Rico, San Juan, 00931, P. R.

SOURCE: Polymeric Materials Science and Engineering (1994), 71, 583-5

CODEN: PMSDGG; ISSN: 0743-0515

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB This paper presents two examples of **transition metal** complexes used as **ligands** for metal ions such as alkali and heavy metal. The **transition metal** complexes studied were [Ru(NH₃)₅NCS](PF₆)₂ and K₂[Fe(CN)₄Aphen], where Aphen is 5-amino-1,10-phenanthroline.

L21 ANSWER 29 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1994:260052 HCAPLUS

DOCUMENT NUMBER: 120:260052

TITLE: Indirect potentiometric **detection** of metals by use of metal buffer

AUTHOR(S): Imato, Toshihiko; Ishibashi, Nobuhiko

CORPORATE SOURCE: Dep. Chem. Sci. Technol., Kyushu Univ., Fukuoka, 812, Japan

SOURCE: Proceedings - Electrochemical Society (1993),

93-7(Proceedings of the Symposium on Chemical Sensors
II, 1993), 156-61
CODEN: PESODO; ISSN: 0161-6374

DOCUMENT TYPE: Journal
LANGUAGE: English

AB A methodol. for indirect **detection** of metals such as alkaline-earth metals, **transition metals** and rare-earth metals by a copper(II) ion-selective **electrode** (Cu(II)-ISE) is described, where a Cu(II) ion buffer solution comprising a Cu(II)-**ligand** complex and free **ligand** is employed. The **detection** is based on an increase in the **electrode** potential due to the increase in the concentration of free Cu(II) ion caused by the reaction of the metals with the free **ligand** in the Cu(II) ion buffer solution. The sensitivity of the Cu(II)-ISE to metals depended on the stability constant of the metal-**ligand** complex used for the Cu(II) ion buffer and the concentration of the Cu(II) ion buffer, which is qual. explained by theor. consideration. An appropriate selection of the **ligand** and the pH of the Cu(II) ion buffer could make the sensitivity among metals identical. The proposed method was successfully applied to flow injector anal. for metals and the chromatog. determination of specific metals in mixts.

L21 ANSWER 30 OF 41 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN
ACCESSION NUMBER: 1992-07901 BIOTECHDS

TITLE: Stable electrochemical biosensor;
amperometric enzyme **electrode** with immobilized
enzyme and mediator covered by a membrane

PATENT ASSIGNEE: Cranfield-Biotechnol.
PATENT INFO: WO 9204466 19 Mar 1992
APPLICATION INFO: WO 1991-GB1444 28 Aug 1991
PRIORITY INFO: GB 1990-19126 1 Sep 1990
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 1992-114370 [14]

AB A new electrochemical biosensor comprises (a) a conductive support matrix; (b) an enzyme system including a mediator immobilized on the support; and (c) a covering membrane incorporating a mediator. The mediator in the enzyme system may be the same as the mediator incorporated in the membrane. The mediator may be e.g. heterofulvalene inorganic phosphate donor, metallocene, quinone, a metal complex based on a platinum or **transition metal**, or an organic **ligand**. The membrane may be formed from e.g. ethyl hydroxyethylcellulose, ethylcellulose, cellulose acetate, polyvinyl chloride, polyurethane, polycarbonate, cellulose nitrate or functionalized aryl polyethers. The biosensor provides a quantitative amperometric response when used for 50 repeat tests with an **analyte**. By including a mediator in the membrane, the biosensor may be used repeatedly, without significant reduction in the quantitative and amperometric response. The biosensor may be used for analysis of e.g. glucose, lactic acid, creatinine, urea or pyruvic acid in blood. (29pp)

L21 ANSWER 31 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1993:18841 HCAPLUS

DOCUMENT NUMBER: 118:18841

TITLE: Enzyme **electrode**-containing sensor for
measuring the quantity of a dissolved component,
especially glucose

INVENTOR(S): Graetzel, Michael; Fraser, David; Zakeeruddin, Shaik
Mohammed; Randin, Jean Paul; Frenkel, Erik Jan

PATENT ASSIGNEE(S): Asulab S. A., Switz.

SOURCE: PCT Int. Appl., 40 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: French
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9214836	A1	19920903	WO 1992-CH34	19920219
W: AU, BG, CA, CS, FI, HU, JP, KR, NO, PL, RO, RU, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, MC, NL, SE				
FR 2673289	A1	19920828	FR 1991-2200	19910221
AU 9212219	A1	19920915	AU 1992-12219	19920219
AU 656360	B2	19950202		
EP 526602	A1	19930210	EP 1992-903775	19920219
EP 526602	B1	19970102		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, MC, NL, SE				
JP 05506102	T2	19930902	JP 1992-503902	19920219
PL 169972	B1	19960930	PL 1992-296491	19920219
AT 147107	E	19970115	AT 1992-903775	19920219
CA 2080840	C	19990406	CA 1992-2080840	19920219
NO 9204020	A	19921116	NO 1992-4020	19921016
HU 66200	A2	19941028	HU 1992-3285	19921019
HU 212451	B	19960628		
US 5378628	A	19950103	US 1992-938219	19921019
PRIORITY APPLN. INFO.:			FR 1991-2200	A 19910221
			WO 1992-CH34	A 19920219

AB An improved amperometric sensor is disclosed for measuring the quantity of a component, especially glucose, in a solution. The sensor has a measuring **electrode** with ≥ 1 current collector elec. connected at 1 of the elec. contacts and coated with a mixture of ≥ 1 component-specific redox enzyme and ≥ 1 mediator transferring electrons between the enzyme and the current collector. The mediator is a complex of a **transition metal** with bipyridine, terpyridine, or phenanthroline substituted with ≥ 1 electron donor group. A schematic of the sensor is included. A sensor for glucose determination is described which incorporates immobilized glucose oxidase, conductive carbon powder, and a mediator of, e.g., tris(4,4'-dimethoxy-2,2'-bipyridine)osmium complex. Optimization of sensor components is described, as is the influence of hematocrit and various pharmaceuticals on the results produced by the sensor. Standard curves are included.

L21 ANSWER 32 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1991:160323 HCAPLUS
 DOCUMENT NUMBER: 114:160323
 TITLE: Wholly microfabricated biosensors, and manufacture and use thereof
 INVENTOR(S): Cozzette, Stephen N.; Davis, Graham; Itak, Jeanne A.; Lauks, Imants R.; Mier, Randall M.; Piznik, Sylvia; Smit, Nicolaas; Steiner, Susan J.; Van der Werf, Paul; Wieck, Henry J.
 PATENT ASSIGNEE(S): I-Stat Corp., USA
 SOURCE: PCT Int. Appl., 195 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9005910	A1	19900531	WO 1989-US5227	19891112

W: JP, KR
 RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE

US 5200051	A	19930406	US 1989-432714	19891107
EP 442969	A1	19910828	EP 1990-900548	19891113
EP 442969	B1	20020227		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
JP 04503249	T2	19920611	JP 1990-500757	19891113
JP 3105919	B2	20001106		
AT 213833	E	20020315	AT 1990-900548	19891113
CA 2002848	AA	19900514	CA 1989-2002848	19891114
CA 2002848	C	19990831		
CA 2221178	C	20010123	CA 1989-2221178	19891114
US 5063081	A	19911105	US 1990-567870	19900815
US 5212050	A	19930518	US 1990-568441	19900815
US 5466575	A	19951114	US 1992-943345	19920910
US 5554339	A	19960910	US 1993-109507	19930819
US 5837446	A	19981117	US 1995-482517	19950607
US 5837454	A	19981117	US 1995-484095	19950607
US 6306594	B1	20011023	US 1998-193370	19981117
JP 2000065791	A2	20000303	JP 1999-38753	19990217
JP 3137612	B2	20010226		
US 2002090738	A1	20020711	US 2001-941661	20010830
PRIORITY APPLN. INFO.:				
			US 1988-270171	A 19881114
			US 1989-381223	A 19890713
			US 1989-432714	19891107
			JP 1990-500757	A3 19891113
			WO 1989-US5227	W 19891113
			CA 1989-2002848	A3 19891114
			US 1992-943345	A3 19920910
			US 1995-484095	A3 19950607
			US 1998-193370	A1 19981117

OTHER SOURCE(S): MARPAT 114:160323

AB A microfabricated biosensor which may be uniformly mass produced comprises (a) a base sensor (e.g. an electrochem. transducer); (b) a permselective layer (e.g. a polymer film) optionally containing an ionophore, superimposed over at least part of layer (a) and sufficiently thick to pass mols. of mol. weight ≤ 50 and exclude mols. of mol. weight ≥ 120 ; and (c) a biolayer covering at least part of layer (b). The biolayer comprises (i) a bioactive mol. which selectively interacts with an **analyte** and (ii) a support matrix derived from a photoformable proteinaceous mixture and/or a film-forming latex through which the **analyte** can permeate. An electrolyte layer may be interposed between layers (a) and (b). Layer (c) may addnl. be covered by a layer which attenuates **analyte** transport and a photoresist cap. Layer (b) prevents electroactive interfering species from undergoing redox reactions at the indicator **electrode**. Methods for conducting assays (e.g. immunoassays) using the sensors are described. Thus, the base sensor for a glucose sensor comprised an array of unit cells on a Si wafer; each unit cell consisted of an Ag/AgCl reference/counter **electrode** and 2 Ir catalytic **electrodes** prepared by plasma deposition or sputtering and standard lithog. techniques including spin-coating with a pos. photoresist. Layer (b) was prepared by spin-coating an alc. solution of N-(2-aminoethyl)-3-aminopropyltrimethoxysilane onto the wafer and baking. Layer (c) was prepared from a mixture of fish gelatin and ferric ammonium citrate (photoinitiator) to which were added glucose oxidase, crosslinking agent (N,N'-methylenebisacrylamide), and a sugar alc. (to alter the porosity). An attenuation layer contained dimethylsiloxane-bisphenol A carbonate copolymer.

L21 ANSWER 33 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1991:114135 HCAPLUS

DOCUMENT NUMBER: 114:114135

TITLE: Mercury(II) ion selective **electrodes** based

on thia-crown **ligands** as neutral carriers
 AUTHOR(S): Masuda, Yoshitaka; Sekido, Eiichi
 CORPORATE SOURCE: Fac. Sci., Kobe Univ., Kobe, 657, Japan
 SOURCE: Bunseki Kagaku (1990), 39(11), 683-7
 CODEN: BNSKAK; ISSN: 0525-1931
 DOCUMENT TYPE: Journal
 LANGUAGE: Japanese
 AB Coated graphite Hg(II) selective poly(vinyl chloride) membrane **electrodes** were developed by using 2 neutral carriers: 1,4,7,10,13,16-hexathiacyclooctadecane [HTCO-CGMSE] and 1,4,8,11-tetrathiacyclotetradecane [TTCT-CGMSE]. Polymer films were coated on spectrog. graphite and Denki Kagaku Co. (DKK) chip polytetrafluoroethylene membrane materials. The HTCO-CGMSE exhibited good linear response of 27 mV/decade for Hg(NO₃)₂, within the Hg(NO₃)₂ activity range 10⁻²-10⁻⁵M. The TTCT-CGMSE exhibited sub-Nernstian response of 14 mV/decade for Hg(NO₃)₂, within the same activity range. With the exception of Tl(I), Pb(II), Bi(III) and Fe(III), the values of selectivity coeffs. demonstrate the promising selectivity of HTCO-CGMSE towards Hg(II) with respect to the other **transition metal** ions. The HTCO-CGMSE was useful for end-point **detection** in the titration of Hg(II) with EDTA and tetraethylenetetraminehexaacetic acid.

L21 ANSWER 34 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1988:139615 HCAPLUS
 DOCUMENT NUMBER: 108:139615
 TITLE: Use of electrochemical techniques in the synthesis, characterization and application of molecular conductors: cation effects in the oxidation and reduction of TTF[Ni(dmit)₂]₂ **electrodes**
 AUTHOR(S): Valade, L.; Legros, J. P.; De Montauzon, D.; Cassoux, P.; Interrante, L. V.
 CORPORATE SOURCE: Lab. Chim. Coord., Univ. Paul Sabatier, Toulouse, 31077, Fr.
 SOURCE: Israel Journal of Chemistry (1987), Volume Date 1986, 27(4), 353-62
 CODEN: ISJCAT; ISSN: 0021-2148
 DOCUMENT TYPE: Journal; General Review
 LANGUAGE: English
 AB The use of various electrochem. techniques in the synthesis, characterization and applications of mol. conductors derived from **transition metal** complexes of the dmit₂- **ligand** (H₂ dmit = 4,5-dimercapto-1,3-dithia-2-thione), is reviewed. Cyclic voltammetry can be used for the **detection** of the formation of conductive species derived from the concerned complexes. The use of the TTF[Ni(dmit)₂]₂ as **electrode** material and its electrochem. behavior with various supporting electrolytes, was extensively studied.

L21 ANSWER 35 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1986:487303 HCAPLUS
 DOCUMENT NUMBER: 105:87303
 TITLE: Solution chemistry of ethane-1,2-dithiolate complexes: equilibria and electron-transfer reactions
 AUTHOR(S): Mukherjee, R. N.; Pulla Rao, C.; Holm, R. H.
 CORPORATE SOURCE: Dep. Chem., Harvard Univ., Cambridge, MA, 02138, USA
 SOURCE: Inorganic Chemistry (1986), 25(17), 2979-89
 CODEN: INOCAJ; ISSN: 0020-1669
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB The present study provides definition of the structures and redox reactions of [Ti(edt)₃]²⁻ (H₂edt = ethane-1,2-dithiol), [V₂(edt)₄]²⁻, [Cr(edt)₂]²⁻, [Co(edt)₂]²⁻, [Co(edt)₂]⁻, [Fe₂(edt)₄]²⁻, and [Mn₂(edt)₄]²⁻ in aprotic solvents. All species possess characteristic absorption spectra dominated by **ligand**-metal charge transfer features, and

all are redox-active. From coulometric and cyclic voltammetric studies [Ti(edt)3]2- and [Cr(edt)2]2- are irreversibly reduced and oxidized, resp.; all other species exhibit chemical reversible electron-transfer reactions. [Cr(edt)2]2- (4.95 μ B) retains its planar structure in solution. Planar [Co(edt)2]- and tetrahedral [Co(edt)2]2- are reversibly interconverted at E1/2 = -1.16 V (MeCN). These species were generated sep. by controlled-potential electrolysis of MeCN solns. prepared from (Me4N)3[Co2(edt)4], which has a 1:1 ratio of these species. The weak paramagnetism of [V2(edt)4]2- (0.9 μ B, MeCN) indicates retention of its unusual tetrabridged structure in solution. Oxidation at E1/2 = -0.61 V (MeCN) gives the somewhat unstable complex [V2(edt)4]-, which was not isolated. [M2(edt)4]2- (M = Fe, Mn) have lateral doubly bridged dimeric structures in the solid state. In solution they exhibit solvent- and concentration-dependent magnetic behavior consistent with the equilibrium [M2(edt)4]2- \rightleftharpoons 2[M(edt)2(solv)2]- (solv = solvent). [Fe2(edt)4]2- is not **detectably** dissociated in CH3CN. These species are reversibly reduced to tetrahedral [M(edt)2]2- in CH3CN. An ECE-type mechanism is established by cyclic voltammetry and chronoamperometry for the reduction of [Fe2(edt)4]2- in CH3CN. Apparent lability to dissociation prevented a similar determination for the [Mn2(edt)4]2- system. The electrochem. of MeCN and Me2SO solns. prepared from [Mn2(edt)4]2- showed a significant dependence on **electrode** surface. As manifested in large peak-to-peak seps. (ΔE_p) in cyclic voltammetry, the heterogeneous electron-transfer rate constant at a Pt **electrode** is $\approx 10^3$ smaller than those at a glassy-carbon or basal pyrolytic graphite **electrode**. Solns. of the Fe(III) and Mn(III) dimers in MeCN solns. exhibited adsorption phenomena at a glassy-carbon **electrode** that originated near 0 V before the potential sweep. This treatment caused oxidation of the complexes and filming of the **electrode**, and a cathodic shift of the reduction potential of the adsorbed Mn(III) species compared to that of the diffusion-controlled process. These observations provide a rationalization of extremely large ΔE_p values (0.5-1.1 V) previously reported. Any contributions from structural changes to these values is overwhelmed by other effects. The reaction [Co(edt)2]- + e- \rightleftharpoons [Co(edt)2]2- is a reversible charge transfer under conditions where the Mn systems exhibit $\Delta E_p \geq 120$ mV.

L21 ANSWER 36 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1985:431689 HCAPLUS

DOCUMENT NUMBER: 103:31689

TITLE: Application of indirect potentiometric **detection** with a metallic copper **electrode** to ion chromatography of **transition metal** ions

AUTHOR(S): Haddad, P. R.; Alexander, P. W.; Trojanowicz, M.

CORPORATE SOURCE: Dep. Anal. Chem., Univ. New South Wales, Kensington, 2033, Australia

SOURCE: Journal of Chromatography (1985), 324(2), 319-32
CODEN: JOCRAM; ISSN: 0021-9673

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A metallic Cu **electrode** was applied to the indirect **detection** of some **transition metal** ions separated by ion chromatog. This separation may be accomplished by cation exchange with an eluent consisting of ethylenediammonium ions and a Cu complexing **ligand** such as oxalate, citrate, or tartrate. Alternatively, anionic metal complexes formed with **ligands** such as oxalate or citrate may be separated by anion-exchange chromatog. In both methods,

detection is based on an increase in the potential of the Cu **electrode** resulting from a decrease concentration of the eluent **ligand** (i.e. oxalate, citrate, etc.), when a metal ion is eluted. Cation-exchange chromatog. is the more successful approach and theor. **electrode** response characteristics are presented for this method. Exptl. calibration plots confirm theor. predictions and show that for small amts. of injected solute, a linear relation exists between peak height and the amount of injected solute. When larger solute amts. are used, the injected amount is proportional to the function $1 - 10^{-H/S}$, where H is the peak height and S is the Nernstian slope. Retention data and sample chromatograms are given, and these indicate that the major limitation of potentiometric **detection** with a metallic Cu **electrode** is the selection of mobile phase conditions which provide both good separation and sensitive **electrode** response.

L21 ANSWER 37 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1986:218173 HCAPLUS

DOCUMENT NUMBER: 104:218173

TITLE: Response characteristics of a potentiometric **detector** with a copper metal **electrode** for flow-injection and chromatographic determinations of metal ions

AUTHOR(S): Alexander, Peter W.; Haddad, Paul R.; Trojanowicz, Marek

CORPORATE SOURCE: Dep. Anal. Chem., Univ. New South Wales, Kensington, 2033, Australia

SOURCE: Analytica Chimica Acta (1985), 177, 183-95
CODEN: ACACAM; ISSN: 0003-2670

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The potentiometric response characteristics of a copper metal indicator **electrode** are reported in a flow-injection system when solns. of metal ions are injected into solns. of **ligands** of differing complexing strengths in buffered carrier streams. Theor. Nernstian derivation of equations relating peak heights to both the injected metal ion concentration and the **ligand** concentration agreed well with exptl. peak height measurements for Ca^{2+} , Al^{3+} , Pb^{2+} , Cd^{2+} , Co^{2+} , Cu^{2+} , Ni^{2+} , Mn^{2+} , Zn^{2+} and UO_2^{2+} . A study of injections into buffered **ligand** streams containing EDTA, ethylenediamine, triethylenetetramine, iminodiacetate, citrate, or glutamate shows advantages for the use of the more weakly complexing **ligands** in the carrier stream. Linear responses are obtained at low (10^{-3} - 10^{-4} M) metal ion concns. over narrow ranges. Some chromatog. applications are outlined.

L21 ANSWER 38 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1985:416058 HCAPLUS

DOCUMENT NUMBER: 103:16058

TITLE: Potentiometric **detection** in ion chromatography using a metallic copper indicator **electrode**

AUTHOR(S): Alexander, P. W.; Haddad, P. R.; Trojanowicz, M.

CORPORATE SOURCE: Dep. Anal. Chem., Univ. New South Wales, Kensington, 2033, Australia

SOURCE: Chromatographia (1985), 20(3), 179-84
CODEN: CHRGB7; ISSN: 0009-5893

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A metallic Cu **electrode** housed in a suitable flow-cell is a sensitive and versatile potentiometric **detector** for ion chromatog. This **electrode** can be used for direct or indirect **detection** of many inorg. anions and cations and also for organic acids. In the direct **detection** mode, **electrode** response is based on either complexation of Cu ions at the

electrode surface by eluted species, or on oxidation and reduction reactions for eluted species which are strong oxidants or reductants. Direct **detection** is, therefore, applicable to such species as amino acids, organic acids, chloride, bromide, iodide, chlorate, bromate, and iodate. Indirect **detection** is possible for anions which do not complex Cu ions, provided a Cu complexing **ligand** (such as phthalate) is used in the eluent; cations which complex this **ligand** are also **detectable**. Indirect **detection** can be used for species such as nitrite, nitrate, acetate, formate, succinate, benzoate, alkaline earth ions, and **transition metal** ions. **Electrode** calibration relations are discussed and sample sepn's. are presented, together with some typical **detection** limits attainable in the direct and indirect **detection** modes.

L21 ANSWER 39 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1983:605199 HCAPLUS

DOCUMENT NUMBER: 99:205199

TITLE: Simultaneous determination of cadmium, cobalt, copper, lead, mercury and nickel in zinc sulfate plant electrolyte using liquid chromatography with electrochemical and spectrophotometric **detection**

AUTHOR(S): Bond, A. M.; Wallace, G. G.

CORPORATE SOURCE: Div. Chem. Phys. Sci., Deakin Univ., Waurin Ponds, 3217, Australia

SOURCE: Journal of Liquid Chromatography (1983), 6(10), 1799-822

CODEN: JLCHD8; ISSN: 0148-3919

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The current efficiency (cost) of electrolytic production of high-purity metallic Zn from ZnSO₄ plant electrolyte is critical dependent on the concentration

of a number of trace elements. The matrix, containing a very large concentration excess

of ZnSO₄ in concentrated H₂SO₄ presents difficulties for determining low concns. of

other metals with many anal. methods. Cd, Co, Cu, Pb, Hg, and Ni impurities can be simultaneously determined at concns. ≤ 1 ppm by using a combination of solvent extraction, high-performance liquid chromatog., and electrochem. or spectrophotometric **detection**. Solvent extraction utilizes the formation of pyrrolidine dithiocarbamate complexes, which after removal of Zn complexes and excess **ligand** on an anion-exchange column can be separated on a C-18 reversed-phase chromatog. column and **detected** by UV/visible spectrophotometric or electrochem. **detection**. Other combinations of chromatog. and **detection** procedures were thwarted by the very large concentration excess of Zn and other problems.

L21 ANSWER 40 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1982:484224 HCAPLUS

DOCUMENT NUMBER: 97:84224

TITLE: Simultaneous determination of copper, nickel, cobalt, chromium(VI), and chromium(III) by liquid chromatography with electrochemical **detection**

AUTHOR(S): Bond, A. M.; Wallace, G. G.

CORPORATE SOURCE: Div. Chem. Phys. Sci., Deakin Univ., Waurin Ponds, 3217, Australia

SOURCE: Analytical Chemistry (1982), 54(11), 1706-12

CODEN: ANCHAM; ISSN: 0003-2700

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Cu, Ni, Co, Cr(III), and Cr(VI) were determined by high-performance reversed-phase liquid chromatog. with electrochem. **detection** based on formation, separation, and subsequent oxidation of dithiocarbamate complexes.

Electrochem. **detection** at Au, Pt, and glassy C **electrodes**, the use of different cells, and methods of complex formation and **detection** format were examined to optimize the techniques. Limits of **detection** substantially less than 1 ng can be obtained for all metals. For simultaneous determination of all 5 species,

external formation of complexes prior to injection on to the column is essential. For rapid determination of Cu and Ni but not Co or Cr the dithiocarbamate **ligand** may be included in the mobile phase with in situ rather than external complex formation. The method was used in the anal. of electrolytes.

L21 ANSWER 41 OF 41 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1974:90310 HCAPLUS

DOCUMENT NUMBER: 80:90310

TITLE: Porphyrin-annulene redox-related **ligand** pair. Electrochemical synthesis and characterization of the reduction products of the cobalt, copper, and nickel complexes of a tetraaza[16]annulene

AUTHOR(S): Takvoryan, Nurhan; Farmery, Keith; Katovic, Vladimir; Lovecchio, Frank V.; Gore, Ernest S.; Anderson, Larry B.; Busch, Daryle H.

CORPORATE SOURCE: Evans Chem. Lab., Ohio State Univ., Columbus, OH, USA

SOURCE: Journal of the American Chemical Society (1974), 96(3), 731-42

CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: English

AB CoII(TAAB)2+, NiII(TAAB)2+, and CuII(TAAB)2+, where TAAB is tetrabenzo[b,f,j,n][1,5,9,13]tetraazacyclohexadecine, undergo successive 1-electron electrochem. redns. to form stable complexes which are formulated as derivs. of the dianionic **ligand** TAAB2-, a porphyrin analog. The reduction products, which are tentatively assigned the

formulations [CoIII(TAAB2-)]ClO4, [CoII(TAAB2-)]MeCN, [NiIII(TAAB2-)]ClO4, [NiII(TAAB2-)]0, and [CuIII(TAAB2-)]ClO4, were synthesized by controlled potential electrolysis and, in some cases, by chemical means and characterized by the usual chemical and phys. measurements. Voltammetric studies at dropping Hg **electrode** and rotating Pt **electrode** and cyclic voltammetric studies were carried out on all these compds. in MeOH and MeCN. The reduced complexes of Co have a unique electrochem. which considerably strengthens the suggestion that they possess electronic and structural characteristics which differ significantly from that of the parent CoII(TAAB)2+ complex and that they should be formulated as complexes of the dianion **ligand**, TAAB2-. The dramatic rearrangement to CoIII(TAAB2-)+ is thought to proceed relatively slowly via a CoI(TAAB)+ intermediate. The lifetime of this intermediate is sufficiently long to facilitate its **detection** and characterization by electrochem. and spectral measurements. The CoIII(TAAB2-)+ complex can be reoxidized to the original CoII(TAAB)2+ by using cyclic voltammetry. The relation between the annulene TAAB and the 2-electron oxidation product of the porphyrin dianion is clarified.

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(FILE 'HOME' ENTERED AT 09:59:33 ON 01 JUL 2005)

FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS, LIFESCI' ENTERED AT 10:00:00 ON 01 JUL 2005

```
L1      1033750 S ELECTRODE?
L2      442634 S ARRAY?
L3      23852 S L1 AND L2
L4      4941 S SOLVENT (2W)ACCESSIBLE
L5      3 S L3 AND L4
L6      1 DUP REM L5 (2 DUPLICATES REMOVED)
L7      248883 S TRANSITION (W)METAL?
L8      101 S L3 AND L7
L9      88 DUP REM L8 (13 DUPLICATES REMOVED)
L10     1129452 S LIGAND?
L11     11 S L9 AND L10
L12     2 S L9 AND COORDINATION
L13     5700021 S DETECT? OR ANALYTE?
L14     19 S L9 AND L13
L15     19 DUP REM L14 (0 DUPLICATES REMOVED)
L16     13 S L1 AND L4
L17     7 DUP REM L16 (6 DUPLICATES REMOVED)
L18     8479 S L1 AND L7
L19     663 S L10 AND L18
L20     50 S L13 AND L19
L21     41 DUP REM L20 (9 DUPLICATES REMOVED)
L22     1 S L21 AND COORDINATION
```

=> e meade t/au

```
E1      1      MEADE STRANGE R/AU
E2      10     MEADE SUSIE J/AU
E3      124 --> MEADE T/AU
E4      1      MEADE T B/AU
E5      7      MEADE T D/AU
E6      10     MEADE T E/AU
E7      15     MEADE T G/AU
E8      165    MEADE T J/AU
E9      48     MEADE T L/AU
E10     1      MEADE T S JR/AU
E11     1016   MEADE T W/AU
E12     2      MEADE TARA J/AU
```

=> s e3

```
L23     124 "MEADE T"/AU
```

=> s l23 and l18

```
L24     0 L23 AND L18
```

=> l1 and l23

L1 IS NOT A RECOGNIZED COMMAND

The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> s l1 and l23

```
L25     0 L1 AND L23
```

=> d his

(FILE 'HOME' ENTERED AT 09:59:33 ON 01 JUL 2005)

FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS, LIFESCI' ENTERED AT 10:00:00 ON 01 JUL 2005

```
L1      1033750 S ELECTRODE?
L2      442634 S ARRAY?
L3      23852 S L1 AND L2
```

L4 4941 S SOLVENT (2W)ACCESSIBLE
 L5 3 S L3 AND L4
 L6 1 DUP REM L5 (2 DUPLICATES REMOVED)
 L7 248883 S TRANSITION (W)METAL?
 L8 101 S L3 AND L7
 L9 88 DUP REM L8 (13 DUPLICATES REMOVED)
 L10 1129452 S LIGAND?
 L11 11 S L9 AND L10
 L12 2 S L9 AND COORDINATION
 L13 5700021 S DETECT? OR ANALYTE?
 L14 19 S L9 AND L13
 L15 19 DUP REM L14 (0 DUPLICATES REMOVED)
 L16 13 S L1 AND L4
 L17 7 DUP REM L16 (6 DUPLICATES REMOVED)
 L18 8479 S L1 AND L7
 L19 663 S L10 AND L18
 L20 50 S L13 AND L19
 L21 41 DUP REM L20 (9 DUPLICATES REMOVED)
 L22 1 S L21 AND COORDINATION
 E MEADE T/AU
 L23 124 S E3
 L24 0 S L23 AND L18
 L25 0 S L1 AND L23

=> e thomas t j/au

E1 1 THOMAS T HOWARD/AU
 E2 2 THOMAS T I/AU
 E3 760 --> THOMAS T J/AU
 E4 2 THOMAS T J */AU
 E5 1 THOMAS T J H ST LAMBERT/AU
 E6 2 THOMAS T J P/AU
 E7 3 THOMAS T JOHN/AU
 E8 1 THOMAS T JOSE/AU
 E9 1 THOMAS T JOSEPH/AU
 E10 6 THOMAS T JR/AU
 E11 49 THOMAS T K/AU
 E12 906 THOMAS T L/AU

=> s e3

L26 760 "THOMAS T J"/AU

=> e meade t j/au

E1 10 MEADE T E/AU
 E2 15 MEADE T G/AU
 E3 165 --> MEADE T J/AU
 E4 48 MEADE T L/AU
 E5 1 MEADE T S JR/AU
 E6 1016 MEADE T W/AU
 E7 2 MEADE TARA J/AU
 E8 1 MEADE TH W/AU
 E9 17 MEADE THOMAS/AU
 E10 1 MEADE THOMAS D/AU
 E11 1 MEADE THOMAS E/AU
 E12 159 MEADE THOMAS J/AU

=> s e3

L27 165 "MEADE T J"/AU

=> s l1 and l27

L28 8 L1 AND L27

=> dup rem l28

PROCESSING COMPLETED FOR L28

=> d 1-6 ibib ab

L29 ANSWER 1 OF 6 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN

ACCESSION NUMBER: 2003-04971 BIOTECHDS

TITLE: Composition for detecting target sequence in nucleic acid sample, comprises single-stranded nucleic acid containing electron donor and acceptor moieties covalently attached to nucleic acid, or to polydentate nucleoside;
DNA probe for mutant DNA detection for use in disease diagnosis

AUTHOR: MEADE T J; WELCH T W

PATENT ASSIGNEE: MOLECULAR DYNAMICS INC

PATENT INFO: US 6444423 3 Sep 2002

APPLICATION INFO: US 1998-191785 13 Nov 1998

PRIORITY INFO: US 1998-191785 13 Nov 1998; US 1995-475051 7 Jun 1995

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: WPI: 2003-027991 [02]

AB DERWENT ABSTRACT:

NOVELTY - A composition (I) comprising a single-stranded nucleic acid containing at least one electron donor moiety and at least one electron acceptor moiety, where the electron donor moiety and the electron acceptor moiety are covalently attached to nucleic acid, or to at least one of the electron donor and electron acceptor moiety attached to a polydentate nucleoside, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following: (1) a nucleoside (phosphoramidite) (II) containing a covalently attached polydentate ligand, the ligand attached at the 2' or 3' position of the nucleoside; and (2) making (M) a nucleic acid with an electron transfer moiety via a polydentate ligand, involves forming a nucleic acid from phosphoramidite nucleosides, at least one which comprises a polydentate ligand attached to the ribose of the nucleoside.

WIDER DISCLOSURE - Also disclosed are oligonucleotides comprising at least one nucleoside, covalently attached to a solid support.

BIOTECHNOLOGY - Preferred Composition: In (I), the other electron donor and the acceptor moieties is an **electrode**, or one electron donor and electron acceptor moiety is an organic electron donor or acceptor. Preferred Nucleoside: (II) further comprises a transition metal chelated to the polydentate nucleoside. Preferred Method: The polydentate ligand further comprises a bound transition metal.

USE - (I) is useful for detecting a target sequence in a nucleic acid sample, by applying a first input signal to a hybridization complex comprising the target sequence, which if present, is hybridized to at least one single stranded nucleic acid, where the hybridization complex has a covalently attached electron donor and acceptor moiety, where at least one of the electron donor acceptor moieties are attached to a polydentate nucleoside, and detecting electron transfer between the electron donor and acceptor moieties in the hybridization complex as an indicator of the presence or absence of the target sequence. The single stranded nucleic acid comprises the electron donor moiety and the electron acceptor moiety, and the target sequence comprises the electron donor moiety. Both of the electron donor and acceptor moieties are attached by polydentate nucleosides (claimed). (I) is useful to detect mismatches in a complementary target sequence. The single stranded nucleic acids are useful as a labeled gene probe in molecular biology and in diagnostic medicine and also in automated gene probe assays and in field testing.

EXAMPLE - Synthesis of a polydentate nucleoside was as follows: 2'-aminouridine (10 mmol) and pyridine-2-carboxyaldehyde (11 mmol) were heated to reflux in absolute ethanol until thin layer chromatography (TLC) showed complete conversion of aminouridine to the less-polar

product. The solvent was evaporated, the residue dissolved in methanol, and 11 mmol sodium borohydride added with vigorous stirring. When hydrogen evolution subsided, the mixture was heated to reflux for 2 hour and the solvent was evaporated. The residue was dissolved in water and purified by cation-exchange chromatography on Dowex AG-50 using 2 M ammonia as eluent. (40 pages)

L29 ANSWER 2 OF 6 MEDLINE on STN DUPLICATE 1
ACCESSION NUMBER: 2001645923 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11697958
TITLE: Electronic detection of single-base mismatches in DNA with ferrocene-modified probes.
AUTHOR: Yu C J; Wan Y; Yowanto H; Li J; Tao C; James M D; Tan C L; Blackburn G F; **Meade T J**
CORPORATE SOURCE: Motorola Clinical Micro Sensors, 757 South Raymond Avenue, Pasadena, California 91105, USA.. yucjyu@aol.com
SOURCE: Journal of the American Chemical Society, (2001 Nov 14) 123 (45) 11155-61.
Journal code: 7503056. ISSN: 0002-7863.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals; Space Life Sciences
ENTRY MONTH: 200201
ENTRY DATE: Entered STN: 20011108
Last Updated on STN: 20020321
Entered Medline: 20020123

AB Genotyping and gene-expression monitoring is critical to the study of the association between genetics and drug response (pharmacogenomics) and the association of sequence variation with heritable phenotypes. Recently, we developed an entirely electronic method for the detection of DNA hybridization events by the site-specific incorporation of ferrocenyl derivatives into DNA oligonucleotides. To perform rapid and accurate point mutation detection employing this methodology, two types of metal-containing signaling probes with varying redox potentials are required. In this report we describe a new ferrocene-containing phosphoramidite 9 that provides a range of detectable redox potentials. Using automated DNA/RNA synthesis techniques the two ferrocenyl complexes were inserted at various positions along oligonucleotide probes. Thermal stability analysis of these metal-containing DNA oligonucleotides indicates that incorporation of 9 resulted in no destabilization of the duplex. A mixture of oligonucleotides containing compounds 9 and I was analyzed by alternating current voltammetry (ACV) monitored at the 1st harmonic. The data demonstrate that the two ferrocenyl oligonucleotide derivatives can be distinguished electrochemically. A CMS-DNA array was prepared on an array of gold **electrodes** on a printed circuit board substrate with a self-assembled mixed monolayer, coupled to an electronic detection system. Experiments for the detection of a single-base match utilizing two signaling probes were carried out. The results demonstrate that rapid and accurate detection of a single-base mismatch can be achieved by using these dual-signaling probes on CMS-DNA chips.

L29 ANSWER 3 OF 6 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN
ACCESSION NUMBER: 1999-14677 BIOTECHDS
TITLE: Detecting nucleic acid sequences via hybridization assays involving nucleic acid probes modified with electron transfer moieties such as transition metal complexes;
DNA probe for e.g. cancer and bacteria or virus infection diagnosis
AUTHOR: **Meade T J**; Kayyem J F; Fraser S E
PATENT ASSIGNEE: California-Inst.Technol.
LOCATION: Pasadena, CA, USA.

PATENT INFO: US 5952172 14 Sep 1999
APPLICATION INFO: US 1997-873598 12 Jun 1997
PRIORITY INFO: US 1997-873598 12 Jun 1997
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 1999-527007 [44]

AB A method for detecting target nucleic acid sequences via a hybridization assays involving DNA probes modified with electron transfer moieties (ETMs) such as transition metal complexes (therefore allowing identification of hybridization complexes by detecting changes in the characteristics of electron transfer between the ETMs and an **electrode**), is new. The method involves applying an alternating current input signal to a hybridization complex containing a ss nucleic acid containing one or more covalently attached ETMs; and a ss target nucleic acid molecule and detecting the presence of the target sequence via changes in an output characteristic produced by electron transfer between the **electrode** and the ETM. The method may be used to detect specific target nucleic acid sequences in samples via hybridization assays. The method may therefore be used in molecular or diagnostic medicine. The DNA probes may be used to detect target sequences such as the gene for nonpolyposis colon cancer, the BRCA1 mamma cancer gene, etc. or to detect and diagnose bacteria and virus infection. (32pp)

L29 ANSWER 4 OF 6 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1998:528789 HCAPLUS
TITLE: A highly sensitive DNA biosensor based on redox-active DNA probes and molecular wires.
AUTHOR(S): Bamdad, C.; Fraser, S. E.; **Meade, T. J.**;
O'Connor, S.; Yu, C. J.; Kayyam, J. F.
CORPORATE SOURCE: USA
SOURCE: Book of Abstracts, 216th ACS National Meeting, Boston, August 23-27 (1998), I&EC-080. American Chemical Society: Washington, D. C.
CODEN: 66KYA2
DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English

AB We have developed technologies for the direct electronic detection of DNA. These technologies are based on the detection of redox-active metal complexes covalently attached to DNA probes. Detection of DNA targets is based on hybridization of the targets to metal-labeled probes and to DNA probes immobilized on **electrode** arrays (DNA chips). Hybridization to the probe **electrode** results in generation of a highly sensitive redox signal upon application of a bias potential. Self-assembled monolayer technol. is used to insulate the gold **electrodes** from unbound redox species. Signal transduction from the DNA is facilitated through the use of DNA probes attached to "mol. wires" based on Ph acetylene oligomers. These two technologies allow the micro-**electrodes** to achieve low detection limits in a homogeneous assay format, even in whole blood. Based on this assay system, we have developed a hand-held detector of DNA Hybridization and are developing DNA probe assays for numerous clin. and environmental applications. These assays will combine the power of DNA chips with the convenience and low cost of simple homogeneous assays.

L29 ANSWER 5 OF 6 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN

ACCESSION NUMBER: 1999-13740 BIOTECHDS
TITLE: A highly sensitive DNA biosensor based on redox-active DNA probes and molecular wires;
direct electronic DNA detection method (conference abstract)
AUTHOR: Bamdad C; Fraser S E; **Meade T J**; O'Connor S; Yu C J; Kayyam J F

LOCATION: 1155 Sixteenth Street N.W., Washington, DC 20036, USA.
SOURCE: Abstr.Pap.Am.Chem.Soc.; (1998) 216 Meet., Pt.1, I&EC080
CODEN: ACSRAL
ISSN: 0065-7727
216th ACS National Meeting, Boston, MA, USA, 23-27 August,
1998, 216 Meet., Pt.1, 1998.

DOCUMENT TYPE: Journal
LANGUAGE: English

AB Technologies have been developed which enable the direct electronic detection of DNA. These new technologies are based around the detection of redox-active metal complexes covalently attached to DNA probes. The detection of the target DNA is based on the hybridization of the targets to metal-labeled probes and DNA probes immobilized on **electrode** arrays (DNA chips). The hybridization to the probe **electrode** results in the generation of a highly sensitive redox signal upon the application of a bias potential. The gold **electrodes** are insulated from unbound redox species via self-assembled monolayer technology and the signal transduction from the DNA is facilitated through the use of DNA probes attached to molecular wires based on phenyl acetylene oligomers. The combination of these 2 technologies allows the micro-**electrodes** to achieve low detection limits in a homogeneous assay format, even in whole blood. A hand-held detector of DNA hybridization was developed based on this technology and DNA probe arrays for numerous clinical and environmental application are currently being developed. (0 ref)

L29 ANSWER 6 OF 6 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN
ACCESSION NUMBER: 1997-03014 BIOTECHDS

TITLE: Nucleic acids comprising electron transfer moieties;
DNA probe hybridization method with improved
signal-to-noise ratio

AUTHOR: Meade T J; Kayyem J F; Fraser S E

PATENT ASSIGNEE: California-Inst.Technol.

LOCATION: Pasadena, CA, USA.

PATENT INFO: WO 9640712 19 Dec 1996

APPLICATION INFO: WO 1996-US9769 7 Jun 1996

PRIORITY INFO: US 1995-475051 7 Jun 1995

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: WPI: 1997-099909 [09]

AB A new composition contains an ss nucleic acid (NA) with at least 1 electron donor moiety and at least 1 electron acceptor moiety, covalently attached to the NA at terminal bases or ribose residues. The moieties may be transition metal complexes, **electrodes** or organic compounds. A new method for target NA detection involves hybridization of the new NA to the target to form a complex, and detecting electron transfer. Donor and acceptor moieties may be on separate probes. A new oligonucleotide contains a 1st 2'-amino-modified nucleoside covalently attached to a solid adsorbent, additional nucleosides covalently attached at the 5'-position, and a 2nd 2'-amino-modified nucleoside, and may be produced by the phosphoramidite method. Rapid electron transfer rates resulting from the new method mean that time resolution can greatly enhance the signal-to-noise ratio of monitors based on absorbance, fluorescence and electronic current. A 2-4 order of magnitude improvement in signal-to-noise may be achieved by amplifying signals of particular delays, e.g. through pulsed initiation and lock-in amplifiers. (66pp)

=> d his

(FILE 'HOME' ENTERED AT 09:59:33 ON 01 JUL 2005)

FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS,
LIFESCI' ENTERED AT 10:00:00 ON 01 JUL 2005

L1 1033750 S ELECTRODE?
L2 442634 S ARRAY?
L3 23852 S L1 AND L2
L4 4941 S SOLVENT (2W)ACCESSIBLE
L5 3 S L3 AND L4
L6 1 DUP REM L5 (2 DUPLICATES REMOVED)
L7 248883 S TRANSITION (W)METAL?
L8 101 S L3 AND L7
L9 88 DUP REM L8 (13 DUPLICATES REMOVED)
L10 1129452 S LIGAND?
L11 11 S L9 AND L10
L12 2 S L9 AND COORDINATION
L13 5700021 S DETECT? OR ANALYTE?
L14 19 S L9 AND L13
L15 19 DUP REM L14 (0 DUPLICATES REMOVED)
L16 13 S L1 AND L4
L17 7 DUP REM L16 (6 DUPLICATES REMOVED)
L18 8479 S L1 AND L7
L19 663 S L10 AND L18
L20 50 S L13 AND L19
L21 41 DUP REM L20 (9 DUPLICATES REMOVED)
L22 1 S L21 AND COORDINATION
E MEADE T/AU
L23 124 S E3
L24 0 S L23 AND L18
L25 0 S L1 AND L23
E THOMAS T J/AU
L26 760 S E3
E MEADE T J/AU
L27 165 S E3
L28 8 S L1 AND L27
L29 6 DUP REM L28 (2 DUPLICATES REMOVED)

	L #	Hits	Search Text
1	L1	47417 4	electrode\$2
2	L2	53813 9	array\$2
3	L3	48332	l1 same l2
4	L4	12321 20	detect\$3 or analyt\$2
5	L5	5743	l3 same l4
6	L6	59798	transition adj metal\$2
7	L7	5	l5 same l6
8	L8	1055	solvent adj accessible
9	L9	0	l5 same l8
10	L10	0	l3 same l8
11	L11	10863 6	ligand\$2
12	L13	32161 9	coordinat\$3
13	L14	0	l12 same l13
14	L15	32343	redox
15	L16	1	l12 same l15
16	L17	73465	covalent
17	L18	0	l12 same l17
18	L12	61	l5 same l11
19	L19	3305	MEADE
20	L20	340	l1 and l19
21	L21	96	l3 and l19
22	L22	19	l12 and l19

	Issue Date	Pages	Document ID	Title
1	20050512	14	US 20050097941 A1	Gas sensor device
2	20041202	20	US 20040241738 A1	Detection of binding reactions using labels detected by mediated catalytic electrochemistry
3	20020328	24	US 20020037530 A1	Detection of binding reactions using labels detected by mediated catalytic electrochemistry
4	20020212	25	US 6346387 B1	Detection of binding reactions using labels detected by mediated catalytic electrochemistry
5	19991019	22	US 5968745 A	Polymer-electrodes for detecting nucleic acid hybridization and method of use thereof

	Issue Date	Pages	Document ID	Title
1	20030911	29	US 20030168338 A1	Electrodeposition of redox polymers and co-electrodeposition of enzymes by coordinative crosslinking

	Issue Date	Pages	Document ID	Title
1	20050317	14	US 20050059095 A1	Detection of cell membrane-associated proteins using membrane fragments displayed on encoded microparticle arrays
2	20050310	141	US 20050053962 A1	Amplification of nucleic acids with electronic detection
3	20050106	76	US 20050003399 A1	Binding acceleration techniques for the detection of analytes
4	20050106	70	US 20050003398 A1	Target analyte detection using asymmetrical self-assembled monolayers
5	20040930	90	US 20040189311 A1	Assay cartridges and methods of using the same
6	20040729	82	US 20040146909 A1	Signal detection techniques for the detection of analytes
7	20040729	52	US 20040146899 A1	Tissue collection devices containing biosensors
8	20040708	27	US 20040129579 A1	Photonic signal reporting of electrochemical events
9	20040617	18	US 20040115679 A1	Apparatus for detecting interactions between biopolymer and ligand and method thereof
10	20040318	112	US 20040053290 A1	Devices and methods for biochip multiplexing
11	20040304	13	US 20040043427 A1	Molecular bioswitch for detecting protein interactions using electrical conductivity
12	20040205	33	US 20040023266 A1	Methods and compositions for aptamers against anthrax

	Issue Date	Pages	Document ID	Title
13	20040205	20	US 20040023265 A1	Methods and compositions for nucleic acid ligands against Shiga toxin and/or Shiga-like toxin
14	20040129	13	US 20040018601 A1	Method for generating pure populations of mobile mebrane-associated biomolecules on supported lipid bilayers
15	20040122	34	US 20040011650 A1	Method and apparatus for manipulating polarizable analytes via dielectrophoresis
16	20031113	17	US 20030211637 A1	Single particle electrochemical sensors and methods of utilization
17	20031030	9	US 20030201175 A1	Small volume electrochemical sensor
18	20030918	50	US 20030175947 A1	Enhanced mixing in microfluidic devices
19	20030911	29	US 20030168338 A1	Electrodeposition of redox polymers and co-electrodeposition of enzymes by coordinative crosslinking
20	20030814	54	US 20030152985 A1	Transient electrical signal based methods and devices for characterizing molecular interaction and/or motion in a sample
21	20030710	44	US 20030127333 A1	Integrated solid-phase hydrophilic matrix circuits and micro-arrays

22	20030626	10	US 20030119208 A1	Electrochemical immunosensor and kit and method for detecting biochemical anylyte using the sensor
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	Issue Date	Pages	Document ID	Title
23	20030619	15	US 20030113229 A1	Method for adhesion of polymers to metal-coated substrates
24	20030522	35	US 20030096418 A1	Biosensor arrays and methods
25	20030306	36	US 20030044997 A1	Biological material detection element, biological material detection method and apparatus, charged material moving apparatus
26	20030227	24	US 20030040173 A1	Fabrication of molecular scale devices using fluidic assembly
27	20030130	47	US 20030022393 A1	Array cytometry
28	20021205	24	US 20020179448 A1	Integrated electrokinetic devices and methods of manufacture
29	20021128	93	US 20020177135 A1	Devices and methods for biochip multiplexing
30	20021024	54	US 20020155476 A1	Transient electrical signal based methods and devices for characterizing molecular interaction and/or motion in a sample
31	20020905	49	US 20020123078 A1	Array cytometry
32	20020905	70	US 20020121314 A1	Target analyte detection using asymmetrical self-assembled monolayers
33	20020711	30	US 20020090649 A1	High density column and row addressable electrode arrays
34	20020321	16	US 20020033345 A1	Detection of analytes using reorganization energy

	Issue Date	Pages	Document ID	Title
35	20020221	104	US 20020022261 A1	Miniaturized genetic analysis systems and methods
36	20020131	43	US 20020012943 A1	ELECTROCHEMICAL PROBES FOR DETECTION OF MOLECULAR INTERACTIONS AND DRUG DISCOVERY
37	20020124	35	US 20020009810 A1	ELECTRONICS METHODS FOR THE DETECTION OF ANALYTES
38	20041221	53	US 6833267 B1	Tissue collection devices containing biosensors
39	20041214	9	US 6830668 B2	Small volume electrochemical sensor
40	20040727	30	US 6767733 B1	Portable biosensor apparatus with controlled flow
41	20040713	78	US 6761816 B1	Printed circuit boards with monolayers and capture ligands
42	20040622	68	US 6753143 B2	Target analyte detection using asymmetrical self-assembled monolayers
43	20040525	85	US 6740518 B1	Signal detection techniques for the detection of analytes
44	20040302	35	US 6699719 B2	Biosensor arrays and methods
45	20030729	91	US 6600026 B1	Electronic methods for the detection of analytes utilizing monolayers
46	20030527	30	US 6569630 B1	Methods and compositions for aptamers against anthrax
47	20030107	23	US 6503452 B1	Biosensor arrays and methods
48	20020813	22	US 6432723 B1	Biosensors utilizing ligand induced conformation changes
49	20011023	41	US 6306584 B1	Electronic-property probing of biological molecules at surfaces

	Issue Date	Pages	Document ID	Title
50	20011016	45	US 6303316 B1	Organic semiconductor recognition complex and system
51	20010918	66	US 6290839 B1	Systems for electrophoretic transport and detection of analytes
52	20010724	75	US 6264825 B1	Binding acceleration techniques for the detection of analytes
53	20010619	25	US 6248229 B1	Detection of analytes using reorganization energy
54	20010508	20	US 6228326 B1	Arrays of independently-addressable supported fluid bilayer membranes
55	20010102	99	US 6168948 B1	Miniaturized genetic analysis systems and methods
56	20000111	18	US 6013459 A	Detection of analytes using reorganization energy
57	20000111	19	US 6013170 A	Detection of analytes using reorganization energy
58	19991130	20	US 5993631 A	Methods of analysis/separation
59	19981103	21	US 5830341 A	Electrodes and metallo isoindole ringed compounds
60	19980818	20	US 5795453 A	Electrodes and metallo isoindole ringed compounds
61	19970805	24	US 5653859 A	Methods of analysis/separation

	Issue Date	Pages	Document ID	Title
1	20050310	141	US 20050053962 A1	Amplification of nucleic acids with electronic detection
2	20050106	76	US 20050003399 A1	Binding acceleration techniques for the detection of analytes
3	20050106	70	US 20050003398 A1	Target analyte detection using asymmetrical self-assembled monolayers
4	20040729	82	US 20040146909 A1	Signal detection techniques for the detection of analytes
5	20020905	70	US 20020121314 A1	Target analyte detection using asymmetrical self-assembled monolayers
6	20020321	16	US 20020033345 A1	Detection of analytes using reorganization energy
7	20020124	35	US 20020009810 A1	ELECTRONICS METHODS FOR THE DETECTION OF ANALYTES
8	20041221	53	US 6833267 B1	Tissue collection devices containing biosensors
9	20040713	78	US 6761816 B1	Printed circuit boards with monolayers and capture ligands
10	20040622	68	US 6753143 B2	Target analyte detection using asymmetrical self-assembled monolayers
11	20040525	85	US 6740518 B1	Signal detection techniques for the detection of analytes
12	20030729	91	US 6600026 B1	Electronic methods for the detection of analytes utilizing monolayers
13	20020813	22	US 6432723 B1	Biosensors utilizing ligand induced conformation changes

	Issue Date	Pages	Document ID	Title
14	20011023	41	US 6306584 B1	Electronic-property probing of biological molecules at surfaces
15	20010918	66	US 6290839 B1	Systems for electrophoretic transport and detection of analytes
16	20010724	75	US 6264825 B1	Binding acceleration techniques for the detection of analytes
17	20010619	25	US 6248229 B1	Detection of analytes using reorganization energy
18	20000111	18	US 6013459 A	Detection of analytes using reorganization energy
19	20000111	19	US 6013170 A	Detection of analytes using reorganization energy